

# AMERICAN JOURNAL OF ARCHAEOLOGY

## Second Series

THE JOURNAL OF THE ARCHAEOLOGICAL  
INSTITUTE OF AMERICA

Editor-in-Chief

HAROLD NORTH FOWLER

Associate Editors

GEORGE H. CHASE  
JOHN C. ROLFE  
JOHN P. PETERS  
ALLAN MARQUAND  
CHARLES PEABODY  
WILLIAM N. BATES

## CONTENTS

AMERICAN EXCAVATIONS AT SARDES  
INSCRIPTIONS FROM SARDES  
EXPERIMENTS WITH MYCENAEAN GLAZE  
A PANATHENAIC AMPHORA  
NOTE ON THE INSCRIPTION *A.J.A.* XIV, p. 66  
ARCHITECTURE ON ATTIC VASES  
MEASUREMENTS OF PISA CATHEDRAL  
FURTHER NOTES ON JUSTUS VAN GHENT  
THE CHORAGIC MONUMENT OF NICIAS  
ARCHAEOLOGICAL DISCUSSIONS (January-June, 1910)

NORWOOD, MASS.

PUBLISHED FOR THE INSTITUTE BY

**The Norwood Press**

NEW YORK: THE MACMILLAN COMPANY

64-66, FIFTH AVENUE

LONDON: MACMILLAN & CO., LTD.

Annual Subscription, \$5.00

Single Numbers, \$1.50

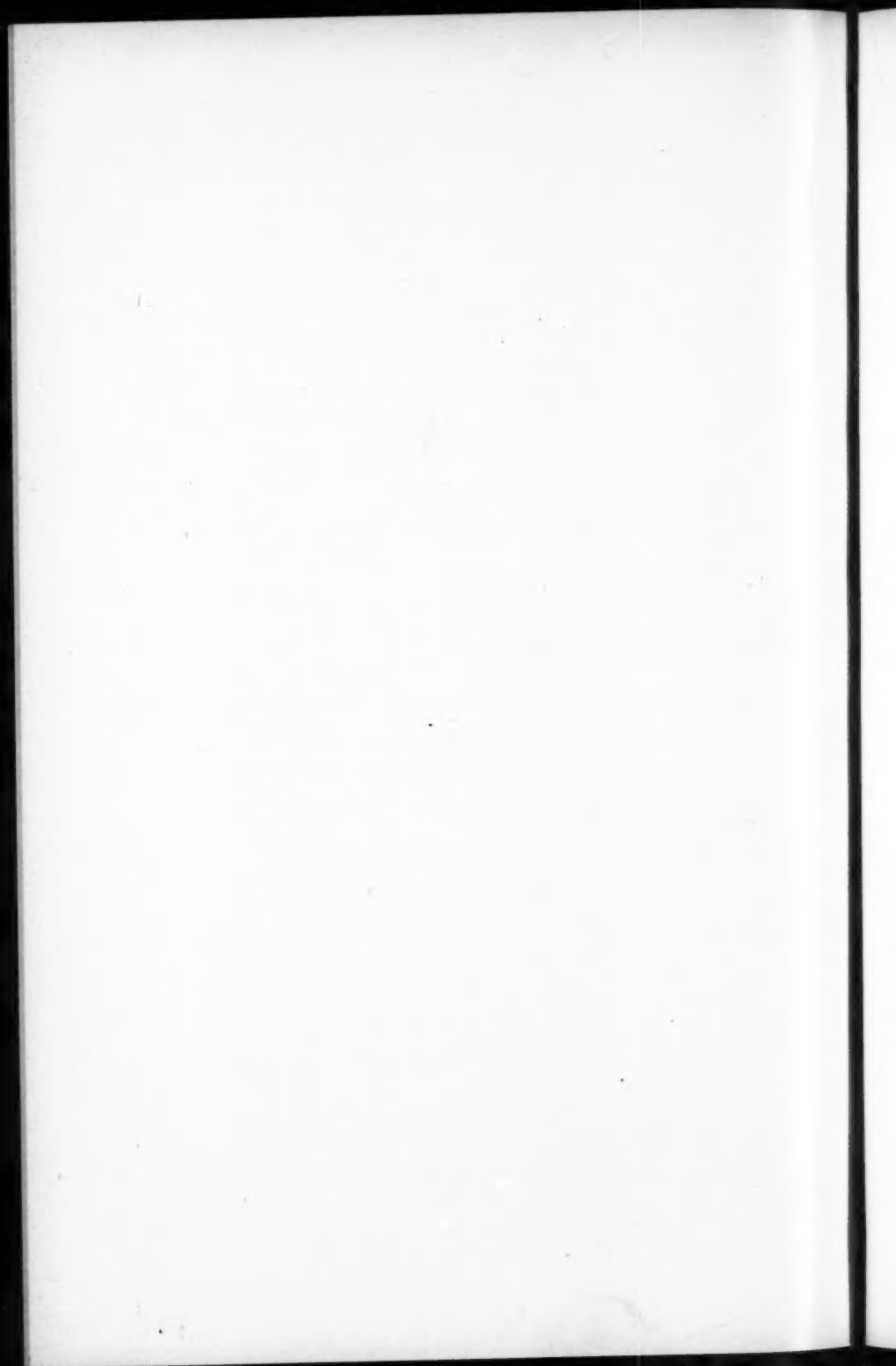
PUBLISHED QUARTERLY

BOSTON UNIVERSITY  
COLLEGE OF LIBERAL ARTS  
LIBRARY

Norwood Press :  
J. S. Cushing Co.—Berwick & Smith Co.  
Norwood, Mass., U.S.A.

## CONTENTS

	PAGE
<b>ARCHAEOLOGICAL INSTITUTE OF AMERICA:</b>	
FIRST PRELIMINARY REPORT ON THE AMERICAN EXCAVATIONS AT SARDES IN ASIA MINOR . Howard Crosby Butler	401
GREEK AND LATIN INSCRIPTIONS FROM SARDES . . . . .	David M. Robinson 414
EXPERIMENTS WITH MYCENAEAN GLAZE . . . . .	Oliver S. Tonks 417
A PANATHENAIC AMPHORA WITH THE ARCHON'S NAME ASTEIUS . . . . .	David M. Robinson 422
NOTE ON THE INSCRIPTION <i>A.J.A.</i> XIV, 1910, P. 66 . . . . .	Clermont-Ganneau 426
ARCHITECTURE ON ATTIC VASES . . . . .	F. B. Tarbell 428
RECENTLY PUBLISHED MEASUREMENTS OF THE PISA CATHEDRAL . . . . .	William H. Goodyear 434
FURTHER NOTES ON JUSTUS VAN GHENT	Morton H. Bernath 450
<b>AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS:</b>	
THE CHORAGIC MONUMENT OF NICIAS . . . . .	W. B. Dinsmoor 459
ARCHAEOLOGICAL DISCUSSIONS (January-June, 1910) . . . . .	William N. Bates, <i>Editor</i> 485
<i>Oriental and Classical Archaeology:</i> —General and Miscellaneous, 485; Egypt, 487; Babylonia, Assyria, and Persia, 489; Syria and Palestine, 493; Asia Minor, 496; Greece, 497 (Architecture, 497; Sculpture, 498; Vases and Painting, 506; Inscriptions, 510; Coins, 512; General and Miscellaneous, 513); Italy, 516 (Architecture, 516; Sculpture, 517; Painting, 517; Inscriptions, 518; Coins, 519; General and Miscellaneous, 521); Spain, 523; France, 524; Belgium, 524; Switzerland, 525; Germany, 525; Austria, 526; Great Britain, 526; Africa, 526.	
<i>Early Christian, Byzantine, and Mediaeval Art:</i> —General and Miscellaneous, 527; Italy, 528; France, 529; Germany, 530; Great Britain, 530.	
<i>Renaissance Art:</i> —General and Miscellaneous, 531; Italy, 531; Spain, 535; France, 535; Holland, 536; Germany, 537; Austria, 539; Great Britain, 539.	
<i>American Archaeology:</i> —General and Miscellaneous, 539.	





FIRST PRELIMINARY REPORT ON THE AMERICAN  
EXCAVATIONS AT SARDES IN ASIA MINOR

---

It has been proposed that a brief statement of the progress of the work on the American excavations at Sardes be made at the end of each season's campaign, and that this report be published, as early as possible, in the *American Journal of Archaeology*. It will not be possible, in these reports, to make a formal publication of any of the monuments or inscriptions discovered in a season; for the reports can be little more than a résumé of the work done from year to year, and will serve only to give archaeologists who may be interested in archaeological research in Asia Minor a preliminary general view of the progress of the excavations, pending the detailed reports of the work which will appear later. This first preliminary report must, of necessity, be particularly incomplete; for it is impossible to speak definitely of levels or stratifications, or to give them names and dates, until a comparatively large area of each level has been cleared; it is difficult to describe buildings that have been only partly uncovered, and unwise to discuss inscriptions or marbles, or pottery or small bronzes, until there has been ample time to study them, and to compare them with known inscriptions or objects which have been thoroughly studied and the ages of which have been determined. But a brief description of the site and some account of our first season's work may not be out of place in this first report.

Sardes, as has been frequently pointed out by archaeologists during the past fifty years, is a peculiarly favorable site for excavation. The cities of various historical epochs are not superposed one above the other, as is known to have been the case in many important ancient centres of civilization, but are spread out over a large area at the base of the mountain which served as an acropolis for each succeeding era of the city's his-

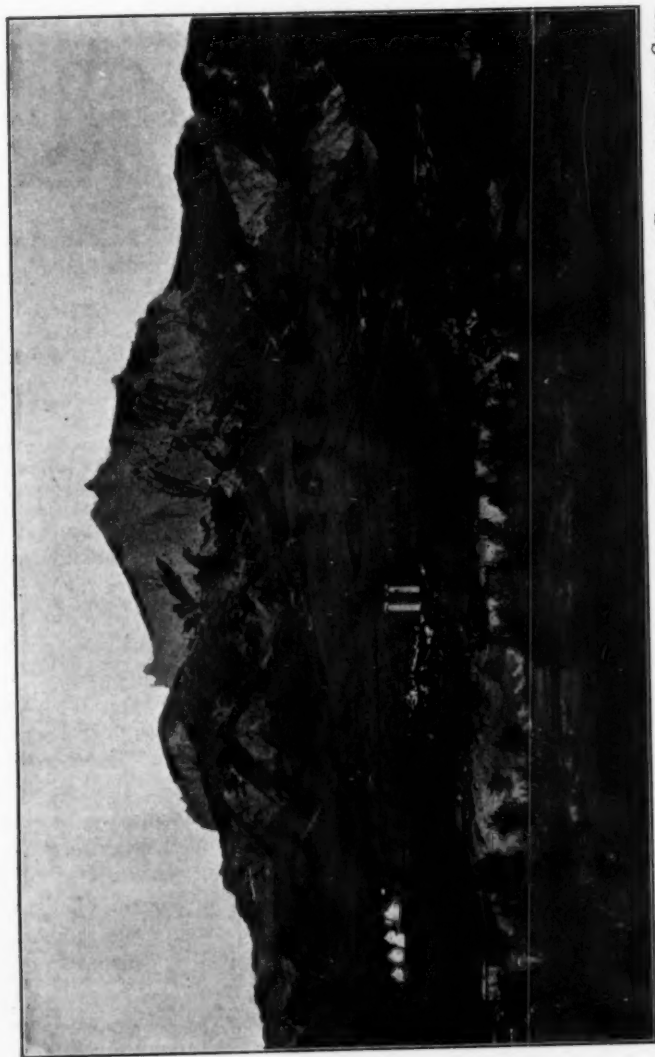


FIGURE 1.—VIEW OF SARDES FROM THE WEST, SHOWING ACROPOLIS, COLUMNS OF TEMPLE, EXCAVATIONS, AND CAMP.

tory. The most ancient of the lower cities was built on the west side of the mountain, between the acropolis and the river Pactolus, and may have spread to the farther bank of the river, unless present signs fail. Here also, apparently, was the Lydian city of historical times, which became a Persian capital and afterwards grew into the Hellenistic city that came under Roman sway in the later centuries preceding the Christian era. Here it is that the two great Ionic columns, never finished, have long marked the site of the earlier town of Sardes (Fig. 1). But this was not the site of the Roman city *par excellence*; for the ruins of a typical city of the empire, consisting of a theatre, a circus, and remains of other large edifices, are to be seen on the north and northeast of the acropolis, separated from the older site by a shoulder of the mountain that extends down to the river. This Roman city seems to have clung to the side of the acropolis, and terrace was built above terrace to elevate the buildings above the plain that stretches out toward the greater river, the Hermus. Still another city, one built in Byzantine times, was placed below the Roman town, and its crudely built walls, its baths and basilica, all containing fragments of Roman architectural details, lie well out in the plain. The reason for the choosing of different locations for three at least of the towns built upon this site may not be far to seek. The geological structure of the acropolis is not rock, but a hard clay-like substance full of gravel and large pebbles; it does not resist erosion well, and the hill that was once crowned by an upper city, as we know from inscriptions, and by a far-famed stronghold, as we learn from history, is now a mere knife-blade, having been washed away into the valleys below. It seems highly probable that the constant descent of débris from the acropolis on its west side, where the effect of the most violent storms is still most disastrously felt, rendered the early site untenable in later centuries, and that the same inconvenience, though felt to a lesser degree on the north, caused the abandonment of the Roman city built on the slopes, and the erection of the Byzantine city out on the plain where the effects of erosion are greatly diminished. It should be possible, in the course of our excavation, to determine whether the original site was gradually abandoned, and was slowly buried by the wash from the hill,

or whether the destruction of the town in the year 17 A.D., which is a matter of history, was really caused by a great landslide on the west side of the acropolis. If such was the case, the city built by the Emperor Tiberius in place of the one destroyed, which is also a matter of history and is further attested by inscriptions, is represented by the ruins of Roman buildings on the north slope of the acropolis, and one may assume that the older city remains substantially as it was buried in the first century of our era. Our excavations thus far have discovered no evidence opposed to this assumption.

The excavations were begun in March and continued into July of the present year, 1910, under my direction. Mr. Charles F. Cook, C.E., was engineer in charge, and Mr. Charles N. Reed, C.E., assistant engineer. Mr. Harold W. Bell went out to take charge of the pottery and small objects discovered, and Professor David M. Robinson came over from the American School of Classical Studies at Athens, for a few weeks, to copy the inscriptions for publication. There being no town near by, nor any habitable houses, the hovels of the peasants being uncomfortable and unsanitary, it was necessary for us to live in tents, which were pitched near the standing columns.

The work of the first season has been, as the work of many seasons to come will probably be, devoted to the unearthing of the old city between the acropolis and the Pactolus. This city on the western slope is deeply buried in soil from six metres deep at the river to probably ten metres deep at the columns, and still deeper toward the acropolis. The long gradual slope of the present surface is cut sharply off at the river side where the water, owing to a change of the stream bed, has undermined the bank of accumulated soil and débris, and has left a perpendicular face which presents a useful cross-section of the stratifications at this point. This cross-section shows, at the bottom, a level bed of hardpan which of course represents the lowest possible stratum of human occupation and which we have called level number one. We began our operations on this level, cutting a face about thirty metres wide in the river bank, directly west of the two standing columns, and digging towards them; but before we had found anything of importance, or even

any indication of archaeological remains, we came upon a pavement and other signs of a stratum of culture at a level of about a metre and a half above the original level, which we called level number two. The face of the cutting was then widened to fifty metres, and excavations were carried along on the new level for twenty metres, or more, towards the columns, disclosing one complete building, parts of another, and two rows of bases which had supported statues and stelae. The building which was completely excavated on this level is, I believe, a structure of great antiquity; it is long and narrow, lying nearly north-east and southwest, and having, along its long west side, a flight of six steps terminating against solid square structures at the corners of the building. The walls of the ends and of the other long side are flat and unbroken, and are preserved, in places, to a height of a metre above the pavement of the interior. These walls above the pavement are nearly a metre thick and probably were much higher than they are at present. There is evidence to show that a row of columns stood at the top of the flight of steps. The building thus had the form of a much elevated stoa. The whole structure was built of unevenly shaped blocks of a friable sandstone, which appears in a quarry further down the stream and is the only material resembling stone in the immediate vicinity of Sardes. This material, which is hardly fit for building purposes and can be crushed between finger and thumb, was laid in clay, but the outer surfaces were covered with two coats of fine stucco very similar to that seen in buildings of the Mycenaean epoch, so hard and so durable that it has preserved the very perishable wall behind it. No imported stone was used in the whole structure, except for the pavement, where a porous limestone was used, and for the bottom step of marble, which was carried under the face of the parotid walls. This step, however, may have been inserted long after the erection of the building. A fragment of a Persian tile of a beautiful blue, like that of the tiles from Susa, was found in a corner of the building, lying flat upon the pavement.

To the north and south of this building are rows of bases, or pedestals, consisting of a larger and a smaller block of well-dressed marble, the smaller block, which is naturally the upper,

having in every case a sinking, or mortise, carefully cut to receive the tenon at the bottom of a statue or a stele; in some cases the tenon is still in place, well leaded in, but all the statues and stelae have disappeared. There are bases of this kind in front of the parotids of the long building. Only two or three of these bases, curiously enough, are set upon the pavement which can be traced on the south and west of the building; most of them stand on hard-packed earth, from thirty to fifty centimetres above that level. In several instances the pavement extends under the earth beneath a pedestal, and the rough unfinished surface of the lower part of the sides of the pedestals shows that they were to be sunk in the earth; so that the distance from the old pavement to the original level about the pedestals is from fifty to seventy-five centimetres. The pavement, then, and the old building, which was certainly coeval with it, are older than the pedestals, or older than most of them, the pavement having been buried for some time when the pedestals were set up. Most of the pedestals are perfectly plain, such as might have been used in any historical period; but their very plainness argues for an early, rather than a late, date; two have mouldings of profiles which I believe to be early, at least as early as the fifth century B.C., a third may be of the fourth century. None of these pedestals bears an inscription; but a cylindrical pedestal for a statue was found, not *in situ*, near the steps of the long building and on the level of the third step from the top, with a long inscription which may be as late as the first century after Christ.

As excavations proceeded on the level which I have been describing, we came upon a solid structure, about three metres square, composed of large blocks of white marble carefully fitted together but with unfinished surfaces, standing to the south of the oblong building, and, a little later, a similar structure directly east of the first, and then a row of three huge masses of marble extending northward from the second, behind the oblong building, absolutely parallel with it, and about four metres east of it (Fig. 2). It was evident that these structures were foundation piers; for they were not intended to be seen, and several of them had been partly encased in rubble masonry which had been rudely dumped into trenches which



were dug about them some time after they had been constructed. It occurred to me at once that these were probably the foundations of columns, as the spacing suggested that probability; but the distance to the two standing columns was so great that it did not at first occur to me that there could be any connection between them and our pedestals; but, as more piers were excavated on the south side, extending toward the columns, the spacing, the bearing, and the alignment of our piers made it more and more evident that there must be some connection

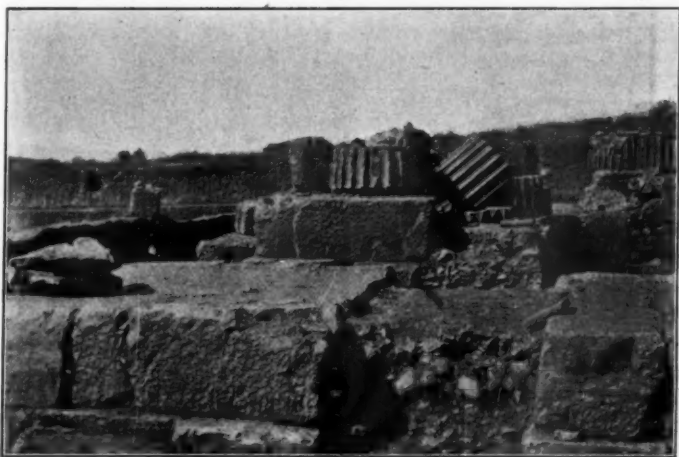


FIGURE 2.—THE EXCAVATIONS FROM THE SOUTH. MARBLE FOUNDATION PIERS.

between the two, and it was presently proved beyond a doubt that we were working in the west porch of the temple whose east porch is marked by the columns standing a hundred metres away. We continued to work on the old level as long, and at as many points, as possible, on the chance of finding remains of an older temple among the substructures of the later one; but when the foundations of the west wall of the cella were reached, we were obliged to abandon the older level and to come up about three metres to a new level which soon proved to be the pavement level of the porch and cella of the great temple. As the soil above the new level became deeper, we found more

and more of the building preserved, and, toward the end of the campaign, came upon a portion of the north wall of the opisthodomos preserved to a height of over two metres above the interior pavement. This wall, which is of unusual thickness, has a heavy moulding on its exterior and interior faces, is exquisitely joined and highly finished, and bears upon its inner face a long Greek inscription the date of which may be placed in the fourth or the third century B.C. The inscription, moreover, definitely proves that the temple was sacred to Artemis, bearing out the theory advanced by M. Georges Radet in his *Cybéle*. Fortunately it answers two of the most important questions regarding the temple, giving a *terminus ad quem* for the date of the temple, and naming Artemis as its goddess.

The excavations, which had begun at a width of fifty metres, were continued until the end of the season at the same width, reaching a distance of seventy-five metres on either side; but the face of the cutting was not parallel to the line of the west end of the temple, and, as the temple is more than fifty metres wide, we did not uncover its entire width. At the end of the season we had unearthed seven piers, or foundations for columns, on the south flank of the temple and a short section of steps on that side, we had discovered, or accounted for, six columns of the west porch and two of the inner row at the west end, the entire width of the west end of the cella with one course above the pavement *in situ*, a part of the north wall of the cella (that is, of the opisthodomos) with three courses and an inscription *in situ*, two piers for interior columns in the opisthodomos, and a fine flight of steps on the north side of the west porch (Fig. 3) within the outer row of columns. Since we have disclosed the width of the cella, and several of the piers of the columns of the south flank, it is evident that the temple was octastyle, though the seventh and eighth columns at the north end of the west porch are still to be excavated. It is further evident that the plan was one that is often called *pseudo-dipteral*, the space between the side columns and the cella wall being wide enough for a second row of columns. The exact number of columns on the sides is as yet unknown; but since the distance from the southwest pier to the southeast column measures ninety-five metres on centres,



it would seem that there must have been twenty or more; but it is unwise to count your columns before they are excavated.

The complete destruction of this end of the temple, and the disappearance of all details of architecture and sculpture, may be explained only by the fact, quite capable of proof, that this end of the building bordering upon the river was not deeply buried in Roman and Byzantine times, and by assuming that the ruins of the temple, exposed during the centuries when



FIGURE 3.—VIEW FROM THE WEST. STEPS AND INNER ROW OF BASES.

Roman and Byzantine Sardes were building, were used as quarries and lime kilns. Layers of chipped marble on levels above the temple pavement give good evidence of this, and the presence of three different lime kilns, not far below the surface, adds further proof. Two of the piers of the west porch—the second and the sixth from the south end—were excavated in ancient times for the marble in them, to their lowest foundations, the sixth having been dug out of its concrete casing which still remains. The southwest angle suffered most severely at the hands of the quarry-men or the lime makers, for here the

piers are only a metre high, while further east and north some of the piers are from two to three metres high, and two of them have the moulded plinths of their column bases still in place; the bases proper, with richly wrought torus mouldings, finely carved reeds and deep scotias, were represented only in fragments prepared for the lime kiln.

It is quite plain that the ancient despoilers of the ruins had no notion of the plan of the building they were breaking up, for when they had discovered a mass of marble, representing one pier that was for some reason more exposed than the others, they dug it out entirely, ignoring the existence of the buried piers on either side of it. It is equally evident that two or three columns at the northwest angle remained standing while the despoliation of the ruin was in progress, for broken capitals and fluted drums were found at a high level, resting on soil that had been cultivated, and barely covered by the present level of cultivation. During this period, either Roman or Byzantine, the chamber at the west end of the temple was converted into a reservoir; the débris inside the chamber was levelled down and filled in with broken stone, and then covered with a pavement of pink cement, *opus signinum*, at a level a metre or more above the original pavement of the chamber. The massive walls were coated with cement and formed the sides of a reservoir probably two or three metres deep; the water was carried away to the north by a great number of tile pipes which we found in large quantities in our excavation, the trenches for which followed tortuous courses among the ruins and ancient foundations which had long been buried when the pipes were being laid. In the latest period of quarrying and lime making the reservoir must have been abandoned; for its west wall was broken up and carried away.

The dates of the earlier periods of marble-breaking, and of the reservoir, are approximately determinable from coins of the fourth and fifth centuries A.D. found on these levels; while the higher levels furnish coins of the later Byzantine centuries and the first century of the Moslem era. The coins, as might have been expected, have been of great assistance in determining the approximate age of the various levels. Almost all of the coins discovered thus far are of bronze. The earlier ones are badly

corroded; but those that have been cleaned thus far have shown that the débris between the second level from the bottom and the level of the temple pavement contains only coins of the second, third, and fourth centuries B.C., while the soil above the temple pavement furnishes only coins which date from the third century to the ninth century A.D. Up to the present time no coins of the Roman Empire earlier than the third century have been found in the excavations, though many Roman coins of the first and second centuries A.D. have been brought to me by peasants who found them while ploughing fields on the other side of the acropolis.

At the close of the season, early in July, we had reached a point in the excavations where the operations of the stone breakers and lime makers had practically ceased, and where the greater depth of the soil above the temple platform had preserved more perfectly all the details of the building. The walls of the cella were found to be intact to a height of from two to three metres, and a beautifully carved Ionic capital, and other details, were found almost intact. One would hardly look for statues in an opisthodomos that had been converted into a reservoir, yet one of the three broken statues which we found was a specimen of later work, probably Roman, which had been used in the filling underneath the cement pavement of the reservoir. The other two, one late Greek and one later Roman and unfinished, were found in a filling just west of the west wall.

In addition to the important inscription found in the temple, and the other inscriptions of greater or less historical value discovered in the excavations, all of which were copied by Dr. Robinson, almost all of the known inscriptions in the walls of the acropolis were recopied with the aid of a ladder, and squeezes were made from a number which formerly had been studied only from the ground by means of a field glass (Fig. 4). One long inscription, almost intact, and hitherto unknown, was taken out of the acropolis wall; while a large number of small inscriptions and fragments of longer ones were collected by Dr. Robinson and M. de Vidas, the Imperial Commissioner, and brought to the camp for preservation in the depot for antiquities which we have now completed; many of these were

unknown. In the same manner a small collection of torsos, less than life size, and of sculptured architectural details, was secured from the peasants, and is now in the depot of the excavations.

During the rainy days of May, a number of tombs which had been discovered in the mountain side across the river, facing the excavations, were opened and examined under the supervision of Mr. Bell. The steep faces of the mountain are honeycombed with these tombs which have been filled with



FIGURE 4.—PART OF THE WALL OF THE ACROPOLIS.

soil by wind and rain, and are not noticeable to the casual observer. Those which were opened proved to be part of an ancient Lydian necropolis. Each tomb consists of a passage, or *dromos*, closed by a door composed of one large stone, or by a number of small flat stones. One of these bore three complete inscriptions in the script, as yet undeciphered, which has been called Lydian, all the examples of it found hitherto having come from ancient Lydia, though not, so far as I know, from Sardes. The *dromos* of each tomb, long and narrow, but high enough to stand up in, leads to a chamber, hewn out of the hard clay of the mountain, with pointed, double-

pitched roof and double couches, also hewn in the clay, on either hand and at the end of the chamber opposite the entrance. In one tomb, in place of the third couch, was a staircase descending to another passage which terminated in a lower chamber similar to the upper. Most of the tombs which we opened had been rifled, probably by Greeks or Romans, at a very early date; for many centuries would be required for the accumulation of the finely pulverized soil which now completely fills them. A majority of the tombs, however, contained pottery, beautiful in form and good in quality, but entirely without painted ornament. The vases suggest no Greek forms, and show no Hellenic influence. With the vases in some of the tombs were found small bronze objects, such as flat mirrors, well made but without ornament, rings, and other objects, and, in one, a ring with an Egyptian scarab. Alabaster of Egyptian form were found in more than one tomb. It is plain that inhumation was practised here, that is, that unburned bodies were laid upon the couches, but the discovery of a large vase full of charred human bones, and of fragments of similar vases, shows that cremation was also practised. It is as yet impossible to know if the charred bones are the remains of funeral sacrifice; for many more tombs must be opened before trustworthy deductions can be drawn from them.

In one of the tombs which have certainly not been rifled three gold necklaces were discovered. The gold work is of exceptionally fine quality, one necklace having been made up of delicate flower-like units, and another representing pepper-corns with berry, flower, and stem. One tomb contained a sarcophagus of terra-cotta, well made but without ornament; the sarcophagus was sunk in a grave in the top of a couch, but its lid was not buried. The contents of all the tombs that have been opened appear to belong to a period considerably earlier than that of any of the objects or buildings unearthed in the excavations.

A brief report on the Greek and Latin inscriptions, by Professor Robinson, follows, and one on the Lydian inscriptions, by Professor Littmann, of Strassburg, will be published in the next issue of this *Journal*.

HOWARD CROSBY BUTLER.

PRINCETON UNIVERSITY,  
September, 1910.

## GREEK AND LATIN INSCRIPTIONS AT SARDES

IN preparation for the publication of all inscriptions from Sardes, including those unearthed in the excavations, the surrounding country was explored. Although Von Premerstein and Keil had recently traversed this section of Lydia, several unpublished stones, mostly of Roman date, were discovered. These (with the exception of a second-century inscription from a Heroum, found about seven hours northwest of Sardes, published in the *American Journal of Philology*, XXXI, p. 402 f.), as well as some already known, about fifteen in all, were brought to the museum at Sardes. Among those unpublished, the most important is the seventh Roman milestone which stood on the road from Sardes to Pergamum, found north of the Hermus near Kesterli, which is just about seven miles from Sardes. The Greek inscription in eleven lines contains the names of Diocletian and M. Aur. Val. Maximianus as Augusti and Fl. Val. Constantius and Gal. Val. Maximianus as Caesares (between March 1, 292, and May 1, 305 A.D.). Those already known are accurately published in most cases, but that in the *Sitzb. der Akad. zu Berlin*, 1889, p. 371, is not nearly as complete as the copy of Cichorius. In that published in *R. Arch.* 1875, p. 54, and *Ath. Mitt.* XXV, p. 121, line 1, Ἰούλιον Λέπιδον[ν] should be read for οἰλιονα ἐπιδ, and in the last line, τ[οῦ] κοιν[οῦ] το[ῦ] for μ[οῦ] το[ῦ].

The inscriptions built into the walls of the acropolis were also carefully examined and copies and squeezes made of all except three. These are inaccessible, but were read with much difficulty by means of telescopes and powerful magnifying glasses. In this way better readings were obtained for Le Bas-Waddington, Nos. 621, 629, and *C.I.L.* III, 409. For example, in the second of these, a late Greek epigram (cf. also



Kaibel, No. 903), in line 2 should be read δόγμασιν, and not λούμασιν or δούμασιν, and in lines 3, 4, εἰκόνα [ἡ]βαίην στησαμένη εἰνομίης μάρτυρα πιστοτάτην, not εἰκόνα χαλκῆν στησαμένη τειμὴν ὥπασε θειοτάτην. The epigram is probably by the same man who wrote other "high-falutin" lines for Hypaipa (cf. Kaibel, Add. 903 a) and several epigrams at Ephesus, which will be published by Keil. One new long Greek inscription of Roman date was removed from the south wall, after four days' work with two men, and is now in the museum. This is an inscription of the σύνοδος of *Technitae* of Dionysus, mentioning the dedication of games at the hospitable and eldest city of Sardes, and is somewhat similar to inscriptions from Teos and Lebedos.

In the excavations themselves it is not surprising that only some eight inscriptions, all Greek, were found, if we consider the fact that the campaign could not yet be extended to the precinct outside the temple, where many inscriptions will undoubtedly come to light. However, some of these are of great worth. One is on a large marble ball with laurel wreath carved in low relief, such as are common in Hellenistic times, and is inscribed Στρατονίκης τῆς Δ[ημ]ητρίου. This is, in all probability, Stratonice, daughter of Demetrius Poliorcetes who captured Sardes in 287 B.C., who was married by Seleucus who obtained possession of Sardes in 281 B.C. In another inscription of Hellenistic date is an interesting list of names of the family of Ephesus the cook. His sister, Seddis, was a *Kitharistria* and his wife had the peculiar name Ninis. His son was Attalus and his daughter had the significant name Artemis. A large cylindrical base, 1 m. high, with a perfectly preserved inscription of the first century A.D., honors, in twenty-two lines, Iollas, son of Iollas, with many crowns and gilded, marble, bronze, and painted statues, giving a long list of his good deeds and the offices he had held. It is also of orthographical interest because of such words as θύας for θυσίας, ἐαυτοῦ for ἐαντοῦ, καθαρῆως for καθαρῶς, etc. A Greek Heroum inscription of the second or third century A.D. records that the Heroum belonged to Aurelia Hesychius Menophilus and Aurelius Isoticius, who was ἀρτοπώλης πολιτικός. But the most valuable is an exceptionally interesting and most informing

inscription *in situ* on the cella wall of the temple. It is one of the best and most important inscriptions found in Asia Minor in recent years. It has been chiselled off at the top, but eighteen long lines of two columns remain, giving a list of tributes paid to the sanctuary of Artemis from cities with such Persian-sounding names as Periasasostra, Tobalmoura, Komb-diliaphoros, Kinaroa, etc. The inscription is of Hellenistic date; it throws much light on the administration of the funds and properties belonging to the temple, and settles the question as to its name. The so-called temple of Cybele becomes a temple of Artemis, who is, after all, only another form of Cybele.

DAVID M. ROBINSON.

JOHNS HOPKINS UNIVERSITY.



## EXPERIMENTS WITH MYCENAEAN GLAZE

---

IN a previous article in this JOURNAL<sup>1</sup> I asserted the belief that the black glaze employed in the black-figured and red-figured Attic styles of vase-painting is composed of a white clay colored by ferrous iron and rendered fusible by the admixture of some alkali. This belief arose from observing that, barring an excess of alkali in the glaze, the elements composing the clay of the vases are the same as those entering into the makeup of the glaze. The iron present predominated as ferric (red) oxide in the clay and as ferrous (black) oxide in the glaze.

If now in the black-figured and red-figured styles the glaze in its component parts proved to be the same as the clay with the exception that black oxide of iron predominated in the glaze and the red oxide in the clay, then in the Mycenaean style employing the red glaze analyses should show the red oxide to be present in larger amounts in the glaze than in the clay, for in this ware the glaze is distinctly redder than the clay. In other words, if the Greeks employed compounds of iron in the ferrous condition in combination with white clay to produce the black glaze, it is reasonable to assume that they used compounds of the same element in the ferric state to obtain the red glaze of the Mycenaean style.

But it will be remembered, from my previous article, that the employment of white clay was necessitated, in the production of the black glaze, by the fact that in ordinary clay the presence of the red oxide neutralized the effect of the black, so that the results were always unsatisfactory. In the case of the red glaze, however, the presence of the red oxide of iron in the clay should be just what is desired, for it would apparently obviate the artificial introduction of the red. Yet before

<sup>1</sup> Vol. XII, 1908, No. 4, pp. 417 ff.

it was possible legitimately to proceed to attempt the reproduction of the red glaze by reversing, as it were, the process employed in connection with the black, it was obligatory to discover by analysis if it were true that the Mycenaean glaze showed an excess of red oxide over the clay.

To determine this the following experiments<sup>1</sup> were performed by my colleague Professor William Foster of the Department of Chemistry in Princeton University.

A glaze-coated fragment of Mycenaean ware was placed in a platinum crucible, covered with a mixture of hydrofluoric and sulphuric acids and, with the exercise of great care to exclude all air so as to prevent the oxidation of the ferrous iron, heated until all the glaze was removed from the body of the clay. The amount of ferrous iron in solution was determined by means of standard potassium permanganate, and the amount, calculated as FeO, was found to be 0.44%. Analysis of an equal weight of the body of the vase, without the glaze, showed 0.56% of FeO present in the clay. The analysis of a fragment from a second vase showed 0.35% and 0.43% of FeO present in the glaze and the body respectively; while in a fragment from still another vase 0.17% and 0.25% of FeO were found.

These experiments, therefore, indicate that the body of the Mycenaean ware contains more ferrous iron than the glaze. This, it will be remembered, is the reverse of what was found to be the case in reference to the black glaze.<sup>2</sup>

The next step was to determine the total iron, as ferric oxide ( $\text{Fe}_2\text{O}_3$ ) in the red glaze and in the body of the clay.

To do this as much red glaze as possible was scratched from a fragment of Mycenaean ware by means of a diamond point, and 0.5 g. of the fine powder was dissolved in a platinum crucible, as previously, by means of a mixture of sulphuric and hydrofluoric acids. All the iron thus being in solution, the ferric iron was next reduced to the ferrous condition with the zinc-platinum couple, and the total iron then titrated by means

<sup>1</sup> These are the first experiments, so far as I know, that have been performed upon Mycenaean clays and glazes. Some of the specimens employed I picked up at Mycenae, the others I selected in Athens from the results of the excavations at the Heraeum.

<sup>2</sup> Cf. Tonks, *A. J. A.*, 1908, p. 423.

of standard potassium permanganate solution. The total iron present as  $\text{Fe}_2\text{O}_3$  (ferric, or red, oxide) was thus found to be 8.16%. This gave the ferric iron present in the glaze. To determine the amount of this material in the body of the clay a similar sample of the body of the vase was treated in a like manner as the glaze, with the result that 7.36% total iron (as ferric iron) was found to be present. After making allowances for the small amount of ferrous iron present in the clay (see above) *the glaze was found to contain considerably more ferric iron than the body of the vase.* A second experiment conducted upon a fragment of another vase confirmed this most conclusively.

This being settled, it now seemed possible to reproduce the Mycenaean red glaze in much the same fashion that the black glaze of the Attic styles had been reproduced; and since Foster's results were more or less the converse of those obtained from analyzing the black glaze, it was natural to attempt to reverse the processes which had been followed in making the black glaze. Where, therefore, ferrous, or black, oxide had been previously used I now undertook to substitute ferric, or red, oxide. In other respects the earlier experiments were followed. In those it had been found that pipe clay could be fused by adding nitrate of soda. So now pipe clay and soda were fritted together and mixed with red oxide of iron. So far as concerned the glazing, I experienced as much success as when reproducing the black glaze; but in every instance the glaze which entered the furnace a good red came out a black of more or less intensity according to the amount of ferric oxide introduced. It required about a score of trials to convince me that this change was not due to some accident; for in some instances air was allowed to enter the muffle, while in others it was carefully excluded. But either way the glaze was always black. Indeed, no other result could be expected, for ferric oxide, when heated, turns from red to black. This was known to Foster with whom I was working; but he had thought that possibly the oxide might act differently when placed in contact with the ingredients in the glaze and in the clay. These trials, however, showed that this view was erroneous.

The answer then to these experiments would seem to be that ferric oxide could not be the coloring substance. But this view assumes, as I did, that the red oxide of iron went into the glaze in the identical form in which the experiments showed it to be present. This of course need not be the case. The iron, in fact, might be in the glaze in an hydrated form, which, when heated, changes to that in which the analyses found it. This is what occurs in the process of baking the ordinary red brick; before entering the kiln the clay is, or at least may be, yellow in color, but when fired it changes from yellow to red as the water is driven off.

If such clay as is used in making these bricks turns red in baking, there could be no reason, so far as could be seen, why it should not do the same when producing a glaze. If, moreover, the red-burning clay could be so employed it would obviate the need of introducing coloring matter artificially and would as a result simplify the process and tend to support the postulate I had laid down in reference to the black glaze on Greek vases, namely, that the glaze is nothing but a clay made fusible by the addition of some alkali and colored by the proper material.

To discover therefore if a red-burning clay could be used in reproducing Mycenaean glaze, I obtained from Trenton, N.J., some yellow clay which turns red upon baking. This was mixed with nitrate of soda, applied to the surface of a piece of clay, and when it came out from the furnace it was red in color. The tone, however, was too dark. It required in fact some fifty trials to find that this Trenton clay when mixed in the proportions of three to one with pipe clay and then fritted together with nitrate of soda in the proportions of one part of the mixture to eight parts of soda gave the same red tone as was to be seen on a specimen of Mycenaean ware in my possession. It was also found that it was necessary to apply the glaze very thinly to obtain the desired results. An electric thermocouple showed that the temperature in the muffle furnace in which the baking was done was 980-990° centigrade.

Finally, to convince myself that the Mycenaean clay itself was capable of being fused into a glaze, I mixed one half a gram of Mycenaean clay, which had been reduced to a powder, with two grams of nitrate of soda and subjected it to the heat of the

furnace. The result was a coarsely fused, somewhat darkish, red glaze which, although imperfect, was good enough to lead one to believe that the fresh clay, which had never been baked, when properly combined with nitrate of soda or some other alkali, would produce the glaze of the ancients.

In reference to the reproduction of the glaze with other clays than the Mycenaean it goes without saying that the proportions of clay and alkali would necessarily vary according to the kind of clay employed. The proportions given in this paper therefore are not constant.

The following is, so far as I know, the first analysis that has been made of Mycenaean clays. The work was done by Foster.

Silica ( $\text{SiO}_2$ ) . . . . .	40.60%
Aluminium Oxide ( $\text{Al}_2\text{O}_3$ ) . . . . .	17.07
Ferric Oxide ( $\text{Fe}_2\text{O}_3$ ) . . . . .	6.93
Ferrous Oxide ( $\text{FeO}$ ) . . . . .	0.56
Calcium Oxide ( $\text{CaO}$ ) . . . . .	19.80
Magnesium Oxide ( $\text{MgO}$ ) . . . . .	4.42
Potassium Oxide ( $\text{K}_2\text{O}$ ) . . . . .	2.96
Sodium Oxide ( $\text{Na}_2\text{O}$ ) . . . . .	0.21
Carbon Dioxide ( $\text{CO}_2$ ) . . . . .	5.40
Water ( $\text{H}_2\text{O}$ ) . . . . .	2.95
Total . . . . .	100.90

A partial analysis of another specimen by the same chemist gave the following results:

Silica . . . . .	47.51 %
Aluminium Oxide . . . . .	20.40
Total ( $\text{Fe}_2\text{O}_3$ ) Iron . . . . .	8.89
Calcium Oxide . . . . .	13.82
Magnesium Oxide . . . . .	4.41
Loss by Ignition ( $\text{H}_2\text{O}$ and $\text{CO}_2$ ) . . . . .	2.78
Total . . . . .	97.81

OLIVER S. TONKS.

PRINCETON UNIVERSITY.

A PANATHENAIC AMPHORA WITH THE ARCHON'S  
NAME ASTEIUS

It was my good fortune last June to be the first to see in the hands of Athenian dealers in antiquities a new Panathenaic vase which had recently been found in many fragments in a grave southeast of the Philopappus Hill. It is of importance because only one other complete dated Panathenaic amphora and three small fragments, two of them having the same archon's name, are known definitely to come from Athens.<sup>1</sup>

The vase has been repaired, and although it is in bad condition, the essential features have been recovered. It is 0.58 m. in height, and its greatest circumference is 1.01 m. Its shape is midway between the squatty low-necked early Panathenaic amphoras and the later long-necked and very slender specimens. It is similar to one in London pictured by Brauchitsch, *Die Panathendischen Preisamphoren*, Tafel No. 6, and described p. 45, No. 76. It belongs to the class which Brauchitsch, p. 44, calls "Serie I (378 bis ca. 370), Jüngere Reihe der Panathenäischen Amphoren," but as it is dated, Brauchitsch's caption, p. 51 (Beginn der Datierung durch Archontennamen), must be transferred from his Serie II to Serie I. The parts between the two panels and below, including base and foot, the handles, and rim are covered with a black glaze. On the neck on both sides is a long tongue pattern, and above, where the handles join, a palmette chain.

<sup>1</sup> Cf. Robinson, *A.J.A.* XII, 1908, pp. 47, 48 (where the literature on Panathenaic vases is cited). The fragment there published, whose greatest height is 0.10 m., and whose greatest breadth is 0.07 m., now lacks the bit of Athena's shield which was formerly visible. A closer examination of the fragment, which is now in Baltimore, than I was able to make before, reveals part of Ν (Ν) above ΝΑΙΧΜΟ (written *κιορηδόν*), so that we must restore ἀρχων Νεαίχμος (320-19 B.C.), although in the years just preceding, 324-3, 323-2, 321-0, ἀρχων follows the name. Brauchitsch, *Die Panathendischen Preisamphoren* (Teubner, 1910), does not cite this fragment.

The reverse, which is in a very damaged state, shows to the left a slender column whose capital is missing. To the right is the *brabeus*, of whom only the head and shoulders and part of the legs are preserved. He is bearded and wears a wreath on his head. He was clad in a himation, which can still be seen on his left shoulder, and which left his torso somewhat bare. He faces to the left toward the two nude wrestlers who, with right foot advanced, are bending forward, and probably seizing one another by the wrist. The heads and arms and upper part of the bodies and considerable portions of the legs are missing, so that we do not know exactly what hold they had, but the moment represented is one of those discussed by Gardiner, *J.H.S.* XXV, 1905, pp. 266-278. The nearest parallel is found on coins of Aspendus (*l.c.* p. 271, 9 c). There is no *ephedros* as is the case on other Panathenaic vases with a wrestling scene.<sup>1</sup>

The obverse has the usual figure of Athena Promachos. The goddess advances to left, her left foot planted solidly on the ground, her right touching the ground only with the toes. She is clothed in a long Ionic chiton with overfold reaching below the hips. The end of this and the lower edge of the chiton itself are decorated with white spots over the black. These are found also on the aegis with the fringe of snakes. Athena's raised right arm grasps the spear, and her left holds the large round shield, which lacks the usual emblazonry (cf. Brauchitsch, *op. cit.* pp. 115 f.). On her head she wears the Attic helmet with tall crest, which projects high up into the tongue pattern. Her position is similar to that of the Athena in Brauchitsch's No. 76, except that in our vase the chiton follows the outline of the right leg more closely. White is used for all flesh parts, face, right arm, feet, and also for the incised lines which mark all the details in chiton, aegis, and helmet.

On either side of the goddess is a slender column,<sup>2</sup> as is

<sup>1</sup> Cf. Brauchitsch, *op. cit.* p. 146, "Brabeus sowohl wie Ephedros fehlen auf keinem der Bilder mit Ringkampf." But on this new vase and others, such as No. 451 in Athens and one in the British Museum, where the same sort of a wrestling scene is pictured, the *ephedros* is lacking.

<sup>2</sup> It is difficult to agree with Miss Bennett, *A.J.A.* XIII, 1909, p. 439, that these columns have cult significance, and are a survival of an aniconic image. Columns occur also on other kinds of vases with athletic scenes to typify the



usually the case. The capitals are not preserved, but they were undoubtedly of the Doric order and took one of the forms mentioned by Brauchitsch, *op. cit.* pp. 104 f. On top of each column was a figure of Winged Victory facing toward Athena, well preserved on that to the right but almost entirely gone on that to the left. The Victory to the right holds in her raised right hand a branch of olive, and in her left what appears to be a cornucopia (cf. Brauchitsch, pp. 110, 111). To the right of the left column, as in all the earlier Panathenaic vases, is the official inscription, designating the amphora as a prize of the games, arranged *stoichedon* with the bottom of the letters toward the column ΤΙΟΝΑΘΕΝΕΘΕΝΑΘΑΟΝ. Although the Ionic alphabet was officially introduced in Attica in 403 B.C., it was not used regularly on Panathenaic vases till 333 B.C. (cf. Brauchitsch, p. 122), and yet with the Attic short vowels we have here the Ionic lambda as in Brauchitsch's Nos. 84, 86, 95, *op. cit.*<sup>1</sup> Until 336 B.C. the two inscriptions with one exception (cf. Brauchitsch, p. 123) are on the inside of the columns. So here to the left of the right-hand column is the inscription ΕΠΙΑΞΤΕΙΟΑΡΧΟΝΤΟΣ, arranged *stoichedon* with the letters facing the same way as in the other inscription, i.e. with the bottom away from the column. This inscription is of great interest, because it gives an archon's name earlier than any hitherto known to occur on Panathenaic vases, and because the formula is different. Asteius was archon in 373-2 B.C., and the first archon in previous lists of dated Panathenaic vases is Polyzelus, 367-6 B.C. (cf. *A.J.A.* XII, 1908, p. 48). The usual formula is *ὁ δαίνα ἤρχε*, which occurs only in the earlier vases of the fourth century B.C.,<sup>2</sup> or *ὁ δαίνα ἄρχων*, or *ἄρχων ὁ δαίνα*, but here is the first occurrence of the formula *ἐπὶ τοῦ δαίνοσ ἄρχοντος*, which is so frequent in inscriptions on stone. We

palaestra or gymnasium. The emblems found on the columns are well collected and discussed by Brauchitsch, *op. cit.* pp. 104-115.

<sup>1</sup> For the amphora published by Hoppin, *A.J.A.* X, 1906, pp. 385 f., Brauchitsch, *op. cit.* p. 58, No. 92, gives the form Λ, but it is an Attic λ.

<sup>2</sup> Cf. Brauchitsch, *op. cit.* Nos. 83, 92, 96, fr. 113. P. 124 he says that in two instances (Nos. 120, 121) in place of the archon's name are found the names of other magistrates, *agonothetes* and *kosmetes*, but Wilhelm (*Beiträge zur Inschriftenkunde*, p. 82) has proved that in No. 121 we should read *ταμ]ιεύοντος* and not *κοσμ]ιεύοντος*.



now know of twenty-four amphorae or fragments with sixteen archons' names, and in six cases the name of the same archon on two vases, and in one the name of the same archon on three vases. Only in the cases of Theophrastus and Pythodelus do the vases with the same archon's names not come from the same site. Since all previous lists are very incomplete and Brauchitsch gives none, I append one brought down to date, giving in parentheses Brauchitsch's numbers.<sup>1</sup>

<sup>1</sup> In the museum at Eleusis there is an unpublished fragment of a Panathenaic vase with the letters *IMO*. This is either part of *Τιοκράτης* (364-3 B.C.) or *Σίμωνίδης* (311-10 B.C.). Since the Ionic alphabet regularly occurs after 333 B.C., only the first seems possible. Also in Eleusis is a vase, not a mere fragment, as Brauchitsch, p. 56, says, with the name Charicleides, which will be published with the other Panathenaic vases at Eleusis by Pringsheim. For Aristodemus, Brauchitsch, p. 56, should refer to *Cl. R.* XIV, p. 474 f., and p. 65, read *Brit. Mus.* B. 611 for B. 605. For Theophrastus the arguments of Brauchitsch, p. 60, for the date 340-39 seem conclusive.

	ARCHON	DATE	PROVENIENCE	PRESENT LOCATION
1.	Asteius	373-2 B.C.	Athens	Athens
2 (84).	Polyzelus	367-6 B.C.	Teucheira	Brit. Mus. B. 603
3 (85).	Polyzelus	367-6 B.C.	Benghazi	Brussels
4.	Timocrates	364-3 B.C.	Eleusis (fragment)	Eleusis
5 (87).	Charicleides	363-2 B.C.	Eleusis	Eleusis
6 (89).	Aristodemus	352-1 B.C.	unknown (fragment)	Chicago (Tarbell)
7 (90).	Themistocles	347-6 B.C.	Athens (fragment)	Athens
8 (91).	Themistocles	347-6 B.C.	Athens (fragment)	Athens
9 (92).	Theophrastus	340-39 B.C.	Capua	Boston
10 (93).	Theophrastus	340-39 B.C.	Benghazi	Louvre
11 (95).	Pythodelus	336-5 B.C.	Caere	Brit. Mus. B. 607
12 (96).	Pythodelus	336-5 B.C.	Caere	Brit. Mus. B. 608
13 (97).	Pythodelus	336-5 B.C.	Athens	Munich
14 (99).	Nicocrates	333-2 B.C.	Benghazi	Brit. Mus. B. 609
15 (100).	Nicetes	332-1 B.C.	Capua	Brit. Mus. B. 610
16 (101).	Nicetes	332-1 B.C.	Cyrenaica	Paris (Feuardent)
17 (102).	Euthycritus	328-7 B.C.	Teucheira	Brit. Mus. B. 611
18 (103).	Euthycritus	328-7 B.C.	Cyrenaica	Berlin
19 (104).	Hegesias	324-3 B.C.	Benghazi	Louvre
20 (105).	Hegesias	324-3 B.C.	Tripolis	lost
21 (106).	Cephisodorus	323-2 B.C.	Benghazi	Louvre
22 (107).	Archippus	321-0 B.C.	Benghazi	Louvre
23.	Neaechmus	320-19 B.C.	Athens (fragment)	Baltimore
24 (108).	Polemon	312-11 B.C.	Eretria (fragment)	Athens

DAVID M. ROBINSON.

JOHNS HOPKINS UNIVERSITY.

NOTE ON THE INSCRIPTION A.J.A. XIV, 1910, p. 66

THE following letter on the inscription published on page 66 of the current volume of this JOURNAL has been received by Professor Sterrett:

*Monsieur et très honoré Collègue, —*

Mon attention ayant été attirée par une note du *Quarterly Statement* du Palestine Exploration Fund (July, 1910, p. 235) sur la curieuse inscription métrique, récemment découverte à Bersabée, je me suis reporté pour de plus amples détails à la publication qui en a été faite dans le *Americ. J. of Arch.* (1910, p. 66). Cet examen m'a confirmé dans ma première impression, et j'ai été heureux de voir qu'en ce qui concerne le mot embarrassant *ἱλαθι*, elle concordait avec votre explication excluant l'in vraisemblable impératif *ἱλαθι*, admis par vos autres collègues. Je suis, sur ce point, tout à fait de votre avis, je pousserai même plus loin dans cet ordre d'idées, l'interprétation propre de ce mot, qui, à la bien prendre, me paraît contenir la clef même de ce petit puzzle. J'incline à croire que le locatif *ἱλαθι* a été employé ici pour l'adverbe de manière *ἱλαδόν*, probablement à cause du mètre (ce mauvais poète byzantine ne s'embarrassait pas pour si peu !) Je traduirais donc : "cater-vatim" ou plutôt techniquement "turmatim" — *par escadrons*. Cela posé, de quoi s'agit-il au juste ? Je ne pense pas que ce soit d'une œuvre d'art (sculpture, peinture ou mosaïque), non plus qu'un globe céleste. Notre Antipatros n'est un *artiste* à aucun titre ; c'est purement et simplement un *commandant de cavalerie*, tenant garnison à Bersabée (cf. *Notitia dignitatum*, ed. Boecking, I, p. 79: Equites Dalmatae Illyriciani Berosabae). Quel est donc ce chef-d'œuvre sans précédent qu'il se vante d'avoir exécuté ? Tout simplement *une fantasia* consistant en évolutions savantes et habiles à l'aide desquelles les escadrons

dirigés par lui avaient retracé sur le terrain les mouvements apparents des corps célestes (*Ouranos*) et la constitution même du monde (*kosmos*). Ces manœuvres militaires, en forme de *orbes* variées, devaient s'être inspirées plus ou moins de certains exercices de la *pompa* du cirque, auxquels les Anciens voulaient prêter un sens cosmique et astronomique. C'est surtout à l'époque byzantine que ces idées symboliques sont formulées (cf. Chron. Alex., Cedrenus, Isidore, et autres). Très fier d'avoir donné aux habitants de Bersabée ce spectacle, sans pareil, à ce qu'il prétend,<sup>1</sup> Antipatros en a fixé, ou fait fixer le souvenir mémorable dans ces quatre vers amphigouriques, qui peuvent dès lors se rendre à peu près ainsi :

"O mes yeux, quelle est donc cette merveille? Comment le *Kosmos*<sup>1</sup> (l'univers) a-t-il été exécuté en ce lieu? Quel mortel a trouvé (*ἤφατο κάλλος*, et non: *τὸ κάλλος*) une beauté inconnue à tous les siècles précédents? C'est Antipatros qui a exécuté cela et qui a fait voir le ciel<sup>1</sup> (*ouranos*) à l'aide de (ses) escadrons, en tenant dans ses mains les rênes de (ses) belliqueux cavaliers."

A propos de l'emploi des verbes *τεύχω* et *εὐρίσκω* cf. une coïncidence assez singulière avec le distique en l'honneur de Cleoetas, l'inventeur de la *ἱππάφεις* d'Olympie (Pausanias, VI, 20, 14).

Il n'y a pas, bien entendu, à s'arrêter au mirage de l'Antipatros père d'Hérode, l'inscription étant visiblement de très basse époque byzantine.

Excusez-moi, je vous prie, si j'ai pris la liberté de vous soumettre cette conjecture, heureux si elle pouvait contribuer à faire un peu de lumière sur ce texte bizarre.

Agréez, je vous prie, l'expression de mes meilleurs sentiments.

CLÉRMONT-GANNEAU.

P. 65, No. 19: *Σαούδ*. Je soupçonne tout simplement une mauvaise graphie pour *Σαού(λ)*, nom propre mieux justifiable.

<sup>1</sup> Ou mieux peut-être et, en tout cas, plus littéralement : *un Kosmos . . . un ouranos*.

## ARCHITECTURE ON ATTIC VASES

---

Do we learn anything about Greek architecture from the representations of architecture on Attic vases; anything, that is to say, which we do not know better from extant remains of Greek buildings? It is the purpose of the present paper to argue that a negative answer to this question, if not certain, is at least more probable than an affirmative one.

The Attic vase-painters seldom attempt to render complete buildings. For the most part they content themselves with a mere suggestion, consisting of one or more columns, sometimes with the addition of an architrave, more rarely of an architrave and a frieze, still more rarely of a complete entablature. The care with which these features are drawn varies widely, of course, in different examples. But, with the rarest exceptions, the architecture depicted even on well-executed vases differs remarkably from that known to us by means of extant remains as having existed in Attica in the sixth and fifth centuries B.C. And what is more, this depicted architecture is not uniform in character, but on the contrary exhibits even in the same period, sometimes even on the same vase, a high degree of variability. Thus Doric columns on the vases are generally much slenderer than are the known Doric columns of stone, while on the other hand the two Ionic columns of the Munich cylix published in the *Archäologische Zeitung*, 1878, Pl. 11, are of proportions much stouter than the normal, one of them being less than four diameters in height, as against the normal eight or nine. Capitals exhibit a capriciousness to which the known stone forms afford no parallel; as on the Munich cylix just cited, where the *canalis* is differently drawn in each case, and is in both cases unlike the standard stone form. *Regulae* and *guttae* are placed above Ionic, as well as

above Doric, columns, but with seldom a hint of the accurate space-relation to the columns which is characteristic of Doric architecture. In short, the architecture of the Attic vases is an almost lawless architecture.

Two explanations of this state of things are *prima facie* possible. According to one<sup>1</sup> there existed, side by side with the stone architecture known from extant remains, an architecture of wood, employed for dwelling-houses and other common types of buildings. It is these perishable structures which the vase-painters had chiefly in mind and in regard to which they give us some trustworthy information. According to the other view the buildings which served as models for the vase-painters were of stone, or at least had stone columns, conforming essentially to the types that have survived to our time, and the eccentricities of the depicted architecture are evidence of nothing but inaccurate drawing.

No one would think of claiming strict accuracy for the architectural drawing of the vase-painters, and the question is only as to the degree of inaccuracy. Without going into minor details let us consider two matters of fundamental importance. The Attic vase-paintings are supposed by M. Vallois and those who agree with him to demonstrate for the sixth and fifth centuries B.C. the existence and prevalence of wooden columns and the existence of a mixed order, viz. Ionic columns surmounted by a Doric or partly Doric entablature. If the vases do not prove as much as this, they do not prove anything regarding architecture.

The chief evidence for wooden columns is the extreme slenderness of most of the Doric columns on the vases. But these slender columns are used for structures which were probably or certainly of stone. Thus a common subject on black-figured hydrias is a fountain-house,<sup>2</sup> where women draw water. It is a plausible conjecture, especially as in one example the fountain is labelled "Calirrhoe," that this fountain-house is

<sup>1</sup> This view has been set forth at length by R. Vallois in an article entitled 'Étude sur les formes architecturales dans les peintures de vases grecs' and published in the *Revue archéologique*, XI, 1908, pp. 359 ff. The present article is much indebted to that of M. Vallois.

<sup>2</sup> E.g. Gerhard, *Auserlesene Vasen*, IV, 307, 308.

intended for the famous Enneacrurus constructed by Pisistratus. Is it credible that an edifice of this character and this importance had columns of wood? Again, on a fine red-figured cylix<sup>1</sup> of the Periclean age we find the temple of Apollo at Delphi indicated by an excessively slender Doric column. Here the actual material is in no doubt.

To this argument it will be answered that, while the testimony of the vase-painters may not be decisive as regards a particular building, their slender Doric columns are good evidence that they had such columns about them and in sufficient numbers to determine their habitual mode of representation. But is this theory of prevalent wooden columns likely? Such columns would have been used, if anywhere, in private houses. Now our knowledge of the ancient Greek house is pitifully meagre, and such hints as to the materials of construction as we do get are from a somewhat later period than that to which the Attic vases chiefly belong. Still these hints deserve to be cited.

Thuc. II, 14: αὐτῶν τῶν οἰκιῶν καθαιρούντες τὴν ξύλῳσιν. Here the word ξύλῳσις is indefinite, but Pollux at least understood it to mean roof-timbers; cf. Poll. 7, 124: ἐρέφιμα ξύλα, ἃ Θουκυδίδης εἶπε τὴν ξύλῳσιν. If the houses had had columns of wood, these would have been carried off also.

Thuc. III, 68, 3: καὶ ὀροφαῖς καὶ θυρώμασι τοῖς τῶν Πλαταιῶν ἐχρήσαντο. If the houses of the Plataeans had had columns of wood, these would have been saved and used as well as the roof-timbers and the doors.

Eur. *H.F.* 1037-8: λαῖνοις . . . κίῳσιν οἴκων. The columns in the house of Heracles are imagined by Euripides as of stone.

Xen. *Mem.* III, 1, 7: ἐπειδὴν δὲ ταχθῇ κάτω μὲν καὶ ἐπιτολῆς τὰ μήτε σηπόμενα μήτε τηκόμενα, οἷ τε λίθοι καὶ ὁ κέραμος, ἐν μέσῳ δὲ αἷ τε πλίνθοι καὶ τὰ ξύλα, ὥσπερ ἐν οἰκοδομίᾳ συντίθεται, τότε γίγνεται πολλοῦ ἄξιον κτῆμα οἰκία. This is the most complete account we possess of the materials of a Greek house. Unfortunately it is possible to disagree as to the precise meaning of τὰ ξύλα. I understand them to be the timbers of floors and roofs, which, like the sun-dried bricks of the walls, are placed between the stone foundations and the roofing tiles. If this is right, there is no suggestion of wooden columns.

<sup>1</sup> Gerhard, *op. cit.* IV, 328.



Theophrastus, *Hist. Plant.* III, 14, 1; IV, 1, 2; 2, 8; V, 3, 3; 3, 5; 3, 7; 5, 2; 6, 1; 7, 6. In these passages Theophrastus refers to various kinds of wood as suitable for roof-timbers and for doors. Nowhere does he speak of columns. It may be added that the other authorities cited by Blümner, *Technologie . . . der Griechen und Römer*, II, 245-296, are equally silent, except for the reference in Pliny, *N.H.* XIV, 9, to columns of vine-wood belonging to a temple at Metapontum. It is reasonably safe to conclude that by the time of Theophrastus (ca. 300 B.C.) the use of wood for columns was negligible.

The evidence afforded by actual remains does not go back as far as the literary evidence. Such as it is, it points in the same direction. Thus a house or house-like building in Piraeus of the third or second century B.C. had limestone columns.<sup>1</sup> In Priene columns of stone occur in houses,<sup>2</sup> but no indication of wooden columns is reported. In the houses on the island of Delos columns of stone were the rule; wooden supports are reported in a single instance.<sup>3</sup>

Thus it appears that by 300 B.C., and probably by 400 B.C., there was little or no use of wooden columns in Greek domestic architecture, at least in Attica and regions similarly situated as to their timber supply. That conditions could have been entirely different in 500 B.C. appears to me improbable. Deforestation had been going on since a much earlier time,<sup>4</sup> and suitable timber for building was becoming scarce, whereas easily worked stone was abundant. Why then, when columns were needed, should stone not have been generally used?

Then consider the combination of Ionic or quasi-Ionic columns with the regulae and guttae of the Doric architrave.<sup>5</sup> In stone architecture, as known by extant remains, the contamina-

<sup>1</sup> *Ath. Mitt.* IX, p. 284.

<sup>2</sup> Wiegand & Schrader, *Priene*, pp. 287, 298.

<sup>3</sup> *Bulletin de correspondance hellénique*, 1906, p. 647. These supports were square posts, not columns, as M. Vallois misleadingly calls them (*op. cit.* pp. 363, 376). As the author of the report in the *Bulletin* speaks of this case as differing "de la plupart des cours précédemment découvertes" he may know of other instances of wooden supports in place of stone columns, but apparently not. See his note 7 on the page referred to.

<sup>4</sup> Plato, *Critias*, 111, c.

<sup>5</sup> E. g. Hartwig, *Meisterschalen*, Pl. LIV; Pollak, *Zwei Vasen aus der Werkstatt Hierons*, Pls. I-III; *Antike Denkmäler*, II, Pl. 1.

tion of the two orders takes place very slowly. The earliest signs of it are in the Parthenon and the Theseum, in which, however, the integrity of the principal order is rigorously preserved. The Ionic buildings of the fifth and fourth centuries show no intrusion of Doric elements. Yet we are asked to believe that a combination which, except for its occurrence on a few vases, is unexampled before the Hellenistic period, was actually used a generation before the Parthenon. Does not this put a severe strain on our credulity?

On the other hand, there is no serious difficulty in supposing that the vase-painters, even the more accomplished ones, rendered with great inaccuracy the architecture which they had about them. People who are learning to draw do not succeed equally well with all the things they attempt. Some things are intrinsically more difficult than others, and some things may for one reason or another excite more interest than others, and so be more diligently practised. Thus the same vase-painters who rendered with all but perfect precision the human figure contented themselves with childish representations of trees. Similarly, while articles of household furniture on vases are generally well drawn, the grave monuments on Attic lecythi are seldom more than loose reminiscences of the actual monuments which the potters of the Ceramicus had almost at their doors. Why should the case not be the same with buildings? The excessive slenderness with which Doric columns are commonly drawn has its parallel in the excessive slenderness of the legs of horses as drawn in the black-figure style;<sup>1</sup> only for some obscure reason it maintained itself more persistently. As for the drawing of Doric regulae and guttae above Ionic or quasi-Ionic columns, it must be remembered that the Ionic order was probably not introduced into Attica till some time in the latter half of the sixth century, so that Ionic buildings which could serve as models were few. Indeed, it looks as if the vase-painters got suggestions for their Ionic columns to a considerable extent from pedestals of statues and legs of furniture.<sup>2</sup> Such models had no architrave, and if a painter chose to add an architrave,

<sup>1</sup> Vallois, *op. cit.*, p. 362.

<sup>2</sup> This applies to columns whose capitals are of the so-called Aeolic type; e.g. Hartwig, *Meisterschalen*, Pl. LIV.



it is small wonder that he should have drawn in careless fashion the Doric features to which he was most accustomed.

To sum up: I do not maintain that no decorator of Attic pottery in the sixth or fifth century B.C. ever saw a wooden column. That would be rash, especially in view of the various regions from which some of these decorators came. But I doubt whether wooden columns had any influence in determining the forms drawn on the vases, and I think it unsafe to draw any inference from the vases as to details of forms actually in use. Also I think it entirely unlikely that a "mixed order" existed at the time referred to, and I regard the occurrence of this combination on a few vases as an accidental anticipation of a development which was to take place three centuries or so later.

F. B. TARBELL.

UNIVERSITY OF CHICAGO.

## RECENTLY PUBLISHED MEASUREMENTS OF THE PISA CATHEDRAL

---

It is generally known to the members of the Archaeological Institute of America that during the years since 1895, inclusive, I have published a large number of observations relating to the cathedral of Pisa. The most recent of these publications are those which have appeared in the *American Architect* of August 4, September 8, October 27, and December 1, 1909, and of January 25, March 16, 1910. The facts to be made known by this paper were published on the date of October 27. The circulation of the *American Architect* is naturally confined to the architectural profession, and the facts recently published are so important as to appear worthy also of a place in an archaeological journal.

The original observations for the levels of the foundations of the Pisa cathedral and for the related levels of the great middle stringcourse were made in 1895. They were originally entered, for record, on a ground plan of the cathedral. They were not, however, analyzed or quoted in text publication as a complete whole until the preparation of the *Catalogue of the Edinburgh Exhibition*, which was held in 1905. The circulation of this catalogue was naturally limited to the Edinburgh public and to those who visited this exhibition.

Thus, so far as the world of Christian archaeology is concerned, this present communication is the first complete account of the levels of the foundations of the Pisa cathedral and of its great middle stringcourse.

As the first point to be made is that the water-table or plinth course of the cathedral is built to the varying slopes of the earth's surface, it seems desirable to show that, although the fact is very exceptional, it is not isolated. Hence a hitherto

unpublished church is first called on for that evidence. This is the church of the Pieve Nuova at Santa Maria del Giudice near Lucca (Figs. 1-5).<sup>1</sup> The water-table is built to the slopes of the surface on both sides of the church. In a length of about 80 feet the church is built downhill, so to speak, to the amount of 2.31<sup>2</sup> feet on the north side, and 2.20 on the south



FIGURE 1.—FACADE OF THE PIEVE NUOVA, AT SANTA MARIA DEL GIUDICE, NEAR LUCCA (TWELFTH CENTURY ROMANESQUE).

side. The cornices are built to the true level, and the cutting of some of the blocks by which the true level was obtained is shown in Figure 3.

Now in the Pisa cathedral the length of the church is 280 feet instead of 80 feet (approximate measurement and not in-

<sup>1</sup> Figures 1, 2, 3, 6, 7, 8, and 9 are from photographs of the Brooklyn Museum Surveys; Figures 4 and 5 are from the *American Architect*, October 27, 1909, p. 163.

<sup>2</sup> The measurements, when not otherwise specified, are given in feet and decimals.

cluding the apse), but the downward slope of the water-table from the highest point at the northwest angle of the façade to the lowest point, at the southeast angle of the choir, is 3 feet (or accurately 3.02 feet).

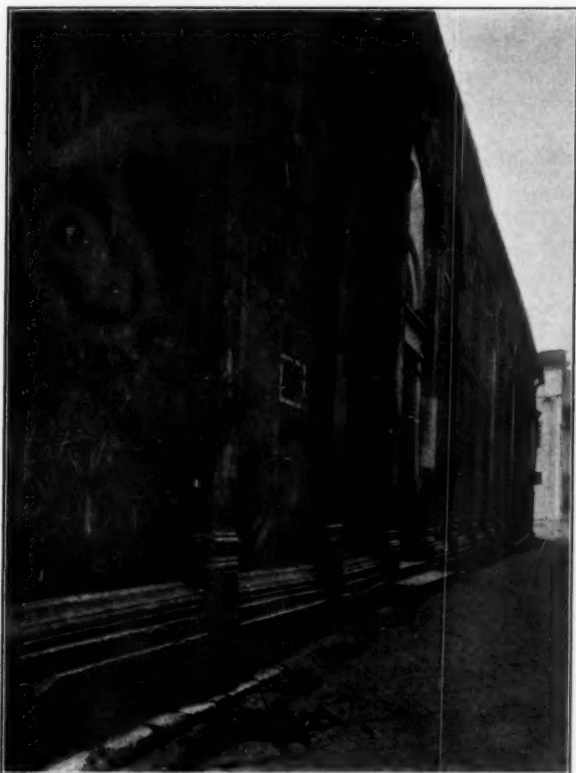


FIGURE 2.—THE PIEVE NUOVA, AT SANTA MARIA DEL GIUDICE, NEAR LUCCA. VIEW OF NORTH WALL, LOOKING UP THE HILL.

It is an astonishing fact that this has never been mentioned or figured by any of the surveyors who have published the cathedral.

That this fact is also habitually overlooked by ordinary vision is certain. It was, for instance, wholly overlooked by myself

and by Mr. John W. McKecknie, who took these levels under my direction and with my assistance, in 1895. The sum total of the levels was the greatest possible surprise to us.

The explanation of the habitual oversight lies first in the distribution of the slopes. If we assume, for instance, the usual

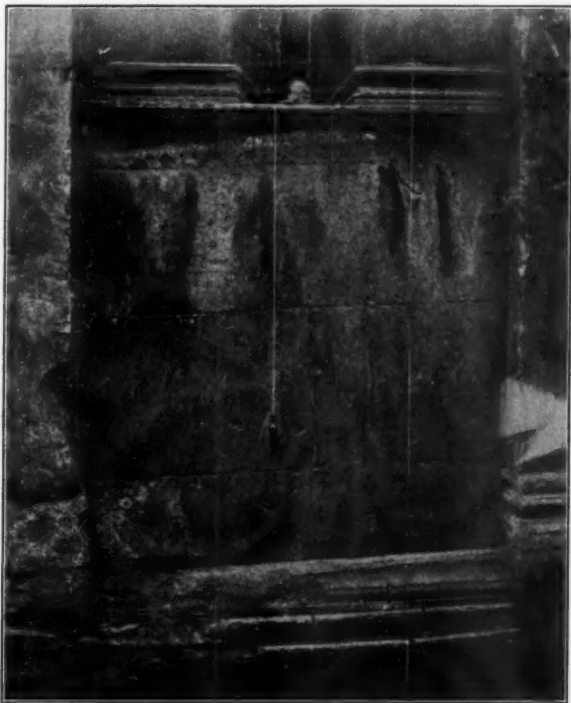


FIGURE 3. — THE PIEVE NUOVA, AT SANTA MARIA DEL GIUDICE, NEAR LUCCA.

(Detail of the North Wall. The plumb-line shows that the window ledge above the sloping water-table is level. Under the window ledge may be seen the wedge-shaped blocks by which the rectification of the slope is obtained.)

approach from the point of view taken in Figure 8, one foot of the slope (accurately 0.86) on the west side at the façade is invisible (Fig. 6), 4 inches of slope (accurately 0.31) on the west side of the south transept are also invisible (Fig. 7),  $2\frac{1}{2}$  inches slope (accurately 0.21) on the south wall of the nave escape

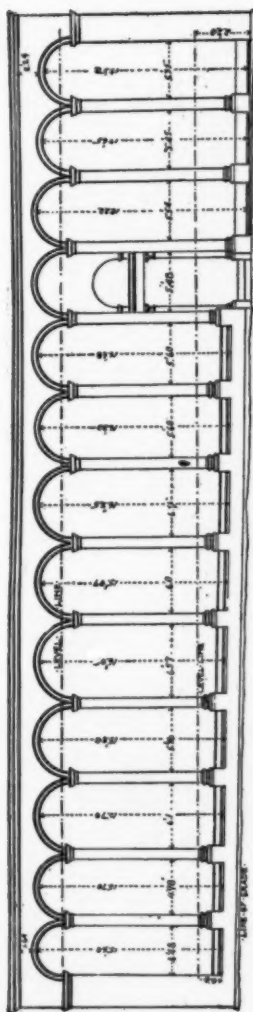


FIGURE 4.—THE PIEVE NUOVA, AT SANTA MARIA DEL GIUDICE, NEAR LUCCA.

Survey in elevation of the South Wall, showing the water-table as following the surface, the cornice as horizontal, and the heights of the pillar capitals and arches as asymmetric. The last right-hand arch is 1.60 ft. below the level of the first left-hand arch.

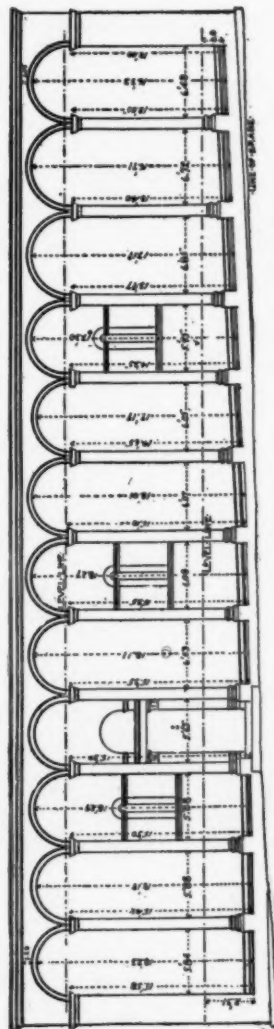


FIGURE 5.—THE PIERE NUOVA, AT SANTA MARIA DEL GIUDICE, NEAR LUCCA.

**Survey in elevation of the North Wall, showing the water-table as built to the hill slope, the cornice as horizontal, and the heights of the pilaster capitals and arches as asymmetric.**

notice, of course (Fig. 8). There is a total slope of  $19\frac{1}{2}$  inches (accurately 1.64) on the south side of the south transept and on the south side of the choir (Fig. 8). What we have to consider first is, that out of the whole 3 feet only 1 foot  $7\frac{1}{2}$  inches is actually in view just here. From any other single point of view many parts of the whole slope are also beyond the range of vision. As to separate parts of the slope within the range of vision, my own experience on the façade side is, that a slope of a foot passes unnoticed. A gentle downward slope in the southeastern part of the church, from transept to apse, may be easily noticed by close attention. The fact is, however, that all surfaces slope gently as seen in perspective, and that the eye will therefore either discount gentle slopes entirely or, at least, utterly fail to realize their true amount.

At all events, the fact is that the water-table of this cathedral is built to the surface and that this surface slopes 3.02 from northeast to southwest.

At Santa Maria del Giudice the cornice and roof line are level—how is it at Pisa? Here we turn to the south side elevation of Cresy and Taylor.<sup>1</sup> The heights of the south side to the roof line of the outer wall are given as 57 feet 8 inches at the façade and as 57 feet 5 inches at the apse in the corresponding cornice. Hence, this roof line slopes 3 inches more than the water-table, which slopes 2.16 feet of the entire slope of 3.02, although no mention of the slopes is made by Cresy and Taylor. But how are these measures distributed? By Cresy and Taylor's elevation at the façade end it is 39 feet 3 inches to the middle stringcourse and 18 feet 5 inches to the roof cornice, but at the apse it is 37 feet 5 inches to the string and 20 feet to the corresponding cornice. In other words, the south side string is 1 foot 10 inches out of level as compared with the water-table (the difference between 39 feet 3 inches and 37 feet 5 inches), according to Cresy and Taylor. But they represent the water-table as level, whereas it slopes 2.16 feet, or 2 feet 2 inches. As we now know the true levels, it would appear from Cresy and Taylor's measures, since the south side stringcourse has 1 foot 10 inches more slope than the water-table, that it therefore slopes a sum total of 4 feet. Cresy and Taylor's heights at the east

<sup>1</sup> *Architecture of the Middle Ages in Italy*, pl. 4 (1829).



end are figured at the centre of the apse, whereas the Brooklyn Museum corresponding measures are taken at the southeast choir angle, but when the proper allowance is made for this difference the two results are practically identical. But Cresy and Taylor have given no measures for separate parts of the church as regards the stringcourse. If the levels for the stringcourse are computed, as they should be, from the northwest angle of the façade

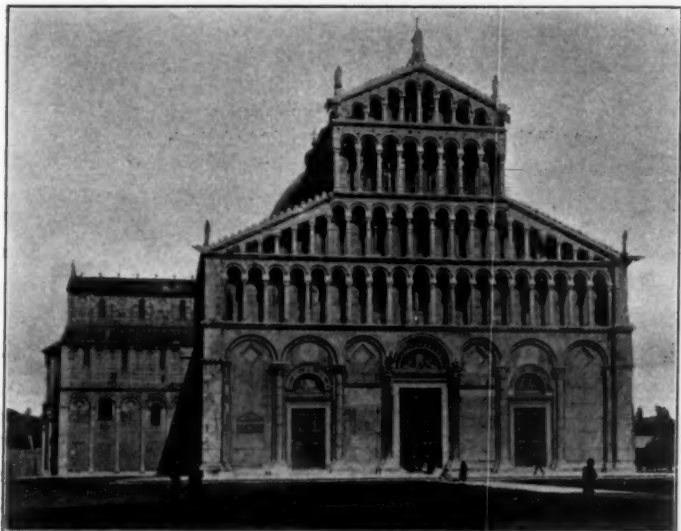


FIGURE 6. — PISA, CATHEDRAL. VIEW OF THE FAÇADE, THE NORTH WALL, AND THE WEST SIDE OF THE NORTH TRANSEPT.

(To illustrate the table of levels for the slopes of the pavement and the stringcourse.)

to the southeast angle of the choir, that is, on the line of greatest slope in the water-table, it is found that the string slopes  $4\frac{1}{2}$  feet (accurately 4.46); that is to say, it slopes  $1\frac{1}{2}$  foot more than the water-table, which slopes 3 feet. On the other hand, we should not forget that Cresy and Taylor's measures prove that this slope of the string is made good and rectified in the second story, which has the same height, within 3 inches, at opposite ends of the church on the south side.

We will now examine the only surveys ever made, for the

separate portions of the great middle stringcourse; namely, those of the Brooklyn Museum survey.

When the levels are taken on the north and south walls of the nave, it is found that the water-table and earth's surface slope only 3 inches on the north side and 2 inches on the south

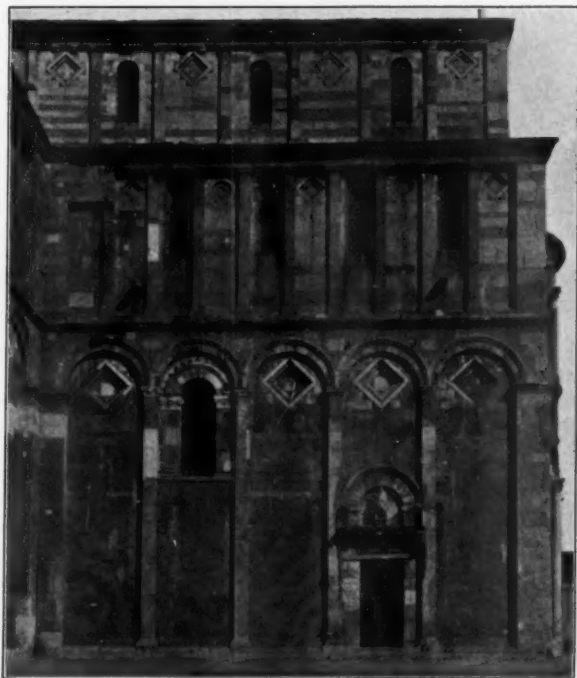


FIGURE 7.—PISA, CATHEDRAL. SOUTH TRANSEPT, WEST SIDE.  
(To illustrate the table of levels for the slopes of the pavement and the stringcourse.)

side, but the corresponding strings *slope 2 feet to a side* (and this slope is rectified in the second story).

When the levels are taken on the *west side* of the transepts, it is found that the water-table and the earth's surface *slope down*, on both sides, away from the nave, and it is found that the stringcourses *slope up*, on both sides, away from the nave. It is also found, although the water-table slopes vary on both

sides (only 0.01 on the west side, north transept, and 0.31 on the west side, south transept), that the distance from water-table to string is the same on both sides, the rise of the string being closely  $5\frac{1}{2}$  inches on each side from the line of the water-table. This result is obtained by variations in the rises of the string, which equalize and discount the variations in the downward slope of the water-table. Thus on the north transept, west side, the water-table slopes down 0.01 and the string slopes up 0.44. On

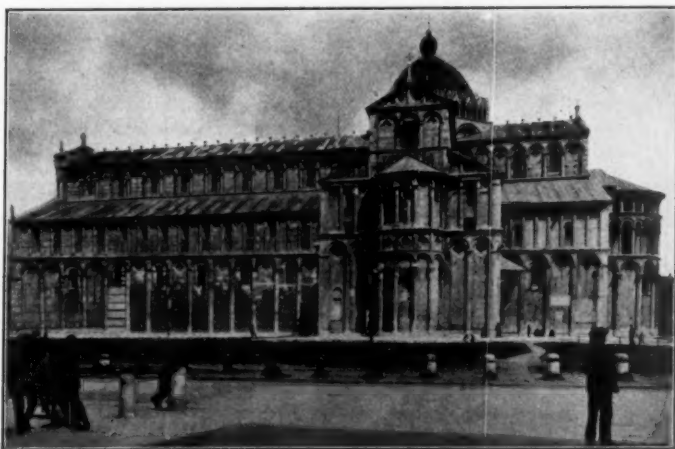


FIGURE 8.—PISA, CATHEDRAL. GENERAL VIEW OF THE SOUTH SIDE.  
(To illustrate the table of levels for the slopes of the pavement and the stringcourse.)

the south transept, west side, the water-table slopes down 0.31 and the string slopes up only 0.09.

Thus when the building is considered without reference to the surface slope, the rise of the string is 0.45 ( $5\frac{1}{2}$  inches) on the north side and 0.40 (5 inches) on the south side; a variation of only 0.05 (or about  $\frac{1}{2}$  inch).

Beyond the points reached in this description, viz. northwest angle, north transept, and southwest angle, south transept, and moving east, the string follows the slope of the water-table, with measurements which correspond to the given slope of the given part of the building quite closely. Minor variations due to builders' errors are corrected, when they occur, in the section

next to the original error—so that the total error on the north and east sides is only 0.06 or  $\frac{3}{4}$  inch. On the south side the total error is only 0.20 or  $2\frac{1}{2}$  inches.

We will next consider the façade. This was the last part of the building to be completed. On the façade side the water-table and earth's surface slope down to the south 0.86

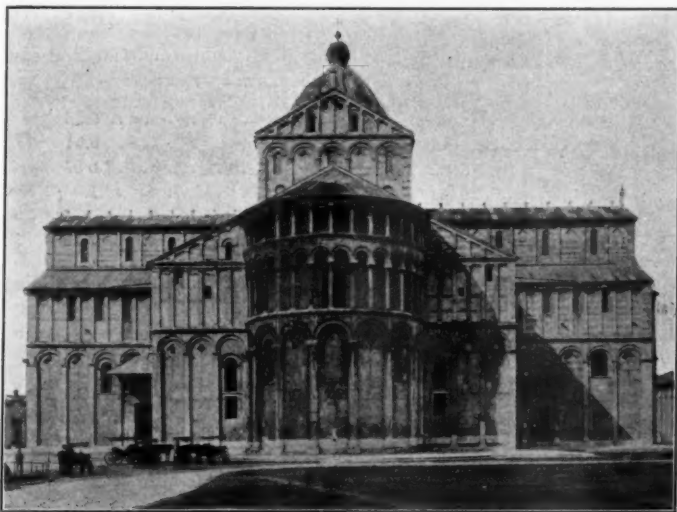


FIGURE 9.—PISA, CATHEDRAL. THE CHOIR IN PARALLEL PERSPECTIVE.  
(To illustrate the table of levels for the slopes of the pavement and the stringcourse.)

( $10\frac{1}{4}$  inches) and the string slopes the same way 0.56 ( $6\frac{3}{4}$  inches).

All minor errors were of course corrected at this end of the building by joining the two western ends of the side stringcourse.

We will now rehearse and tabulate the accurate levels by which these various facts have been made known:

The accuracy of these levels is attested by the fact that they were taken by beginning at the northwest angle of the cathedral and moving thence in two directions, meeting at the southeast angle of the choir. One series of levels was taken by moving east along the north side of the church. The other series

was taken along the façade, then turning east on the south side. The simple fact that the total footings of slope, as levelled in these two different directions, corresponded exactly, at the southeast angle of the choir, is the test of the accuracy of the levels.

TABULATED SUMMARY OF LEVELS FROM THE NORTHWEST, TO THE  
SOUTHEAST, OPPOSING ANGLES OF THE CATHEDRAL

The pavement falls, on the north side of the entire building and east side of the choir (the measures begin at the northwest angle):

North wall . . . . .	0.26
West side, north transept . . . . .	0.01
North side, north transept . . . . .	0.87
North transept, east angle to choir . . . . .	1.05
East side of choir . . . . .	0.83
Total fall . . . . .	3.02

The pavement falls, on the façade and south side of the entire building (the measures begin at the northwest angle):

Main façade . . . . .	0.86
South wall . . . . .	0.21
West side, south transept . . . . .	0.31
South side, south transept . . . . .	0.63
South transept, east angle to choir . . . . .	1.01
Total fall . . . . .	3.02

The stringcourse (levels in the same order for the north side of the entire building and east side of the choir):

Falls, north wall . . . . .	2.09
Rises, west side, north transept . . . . .	0.44
Falls, north side, north transept . . . . .	1.16
Falls, north transept, east angle to choir . . . . .	0.49
Falls, east side of choir . . . . .	1.16
Total fall . . . . .	4.46

The stringcourse (levels in the same order for the façade and south side of the entire building):

Falls, façade . . . . .	0.56
Falls, south wall . . . . .	2.15
Rises, west side, south transept . . . . .	0.09
Falls, south side, south transept . . . . .	0.63
Falls, south transept, east angle to choir . . . . .	1.21
Total fall . . . . .	4.46

COMPARISON OF LEVELS FOR EACH PORTION OF THE CHURCH AND  
RESULTING OBLIQUITIES OF CONSTRUCTION AS DISTINCT  
FROM OBLIQUITIES OF LEVEL

## FACADE

Pavement slopes down to south . . . . .	0.86
String slopes down to south . . . . .	0.56
String rises as compared with pavement . . . . .	0.30

## NORTH WALL

Pavement slopes down to east . . . . .	0.26
String slopes down to east . . . . .	2.09
String falls as compared with pavement . . . . .	1.83

## SOUTH WALL

Pavement slopes down to east . . . . .	0.21
String slopes down to east . . . . .	2.15
String falls as compared with pavement . . . . .	1.94

Variation in the obliquity of the strings on north and south sides of the nave when compared with the pavement . . . . .	0.11
--	------

## NORTH TRANSEPT. WEST SIDE

Pavement slopes down to north . . . . .	0.01
String slopes up to north . . . . .	0.44
Obliquity of the string as related to pavement . . . . .	0.45

## SOUTH TRANSEPT. WEST SIDE

Pavement slopes down to south . . . . .	0.31
String slopes up to south . . . . .	0.09
Obliquity of the string as related to pavement . . . . .	0.40
Variations in obliquity of the strings on the west sides of the transepts, when compared with the pavement . . . . .	0.05

## NORTH TRANSEPT. NORTH SIDE

Pavement slopes down to east . . . . .	0.87
String slopes down to east . . . . .	1.16
Builder's error, excess downward on string . . . . .	0.29

## NORTH TRANSEPT EAST ANGLE TO NORTHEAST CHOIR ANGLE

Pavement slopes down . . . . .	1.05
String slopes down . . . . .	0.49
Builder's apparent error of underestimate in lowering string . . . . .	0.56
Builder's real error of underestimate in lowering string <sup>1</sup> . . . . .	0.27

<sup>1</sup> Because correcting to amount of 0.29 the previous error in the opposite direction, viz. the one made at north transept, north side.

## EAST SIDE OF CHOIR

Pavement slopes down to south . . . . .	0.83
String slopes down to south . . . . .	1.16
Builder's apparent error of excess in lowering string . .	0.33
Builder's real error in excess of lowering string <sup>1</sup> . . .	0.06

## SOUTH TRANSEPT. SOUTH SIDE

Pavement slopes down to east . . . . .	0.63
String slopes down to east . . . . .	0.63
Builder's error . . . . .	0.00

## SOUTH TRANSEPT SOUTHEAST ANGLE TO SOUTHEAST ANGLE CHOIR

Pavement slopes down . . . . .	1.01
String slopes down . . . . .	1.21
Builder's error . . . . .	0.20

If the order of the building reversed the order of arrangement here followed, which is probable, for it is most likely that the entire sequence of construction was from east to west, the comparisons of real and apparent error would make the corrections in the opposite direction. In that case, in considering the east and northeast sides, the first error, 0.33, was compensated for by 0.56 in reverse direction, which was 0.23 too much. The next apparent error of 0.29 in again reversed direction would make the real error 0.06 on the north side, north transept. It is evident that all minor errors could be easily corrected when it came to joining the two west ends of the north and south strings, for here it would be only a question of stretching a cord between the two points across the façade.

## CONCLUSIONS

Is any philosophy of these remarkable facts possible? This question can be more easily debated by recalling a large variety of additional and related facts which have been published for the same cathedral, and for other churches which I have previously mentioned in various periodicals or catalogues.

For possible explanations I will therefore refer to the Catalogue of the recently installed Architectural Exhibition of the Brooklyn Museum, to my recent publications in the *American Architect*, and to others in the *Architectural Record*, as published in 1896 and 1897.

<sup>1</sup> Because variations otherwise correct error of 0.27 in opposite direction at north transept, northeast angle to northeast choir angle.



For the moment I wish rather to urge the singular importance of these particular proofs that these particular facts are themselves intended and constructive, and I wish also to call attention to the fact that these particular proofs are hitherto unpublished in complete form, with the exception mentioned.

To sum up these proofs, we have: first the correspondence of measures for corresponding facts on opposite sides of the church. Thus although the stringcourses on the north and south sides of the nave are out of level, about 2 feet on each side, the discrepancy between the two sides is only 0.11 (or a little more than one inch) when water-table and string are compared.

Again, as regards these stringcourses, there is the fact that the slope is rectified in the second story, and the crowning evidence is found in the wedge-cutting of the blocks above and below the strings, as shown in photographs, many of which have been published and all of which are on exhibition in the Brooklyn Museum.

As regards the west sides of the transepts it is apparent that accidental settlement cannot explain slopes on the same wall in contrary directions, for while the water-table slopes down, the string slopes up, on the west sides of the transept. The correspondence of measures on the two given and opposite sides, as between water-table and string, varies only 0.05 ft. (or only  $\frac{1}{2}$  an inch) and the variations in amount of the slope of the string by which this uniformity is obtained are also a positive proof of intention.

As to the parts of the cathedral beyond the west sides of the transepts, it is now known that the water-table follows the slopes of the surrounding surface in every other individual part of the building. It does only the same here. It is also to be noted that the middle string to the east of the west sides of the transepts follows the general law which rules throughout the building, when the roof line of the outer wall is considered. It is shown by the measures of Cresy and Taylor, as well as by those of the Brooklyn Museum, that the roof line of the entire building is parallel with the water-table, up to the cornice of the outer wall of the nave, and its continuation in the choir. We have also seen that the measures given by Cresy and Taylor

agree with those of the Brooklyn Museum for the total obliquity of the middle stringcourse on the south side of the building, when this obliquity is compared with the line of the pavement, although the obliquities due to slope, or to following slope, in the upper alignment, are ignored. (Rohault de Fleury not only ignores the slopes of surface, but he also represents the middle stringcourse as horizontal in his elevations for the south side of the nave.<sup>1</sup>)

In the matter of explanations, this much may be suggested. As regards the surface slopes of the water-table, it was doubtless held to be more beautiful and artistic to build this base moulding to the surface. Consider how much the building would lose if it stood on an inartistic and unornamented pile of masonry which would have raised the building 3 feet from the earth at the choir, and which would necessarily have carried an irregular front of undecorated masonry under the façade. Instead of rising from the surface, this church, like so many others, would have risen from an irregular pile of bare masonry. The undulating irregularity of the surrounding surface which now adds great beauty to the building would otherwise have involved unsightly methods of building to level.

In the Street of the Silversmiths at Pompeii the masonry and mouldings also incline almost imperceptibly with the slope of the street.<sup>2</sup>

As regards the obliquities of the middle stringcourse, it should be remembered that all such obliquities are translated by the eye into the optical effects to which these obliquities correspond. In photography, or in surveys, they appear abnormal, but in actual vision they result only in an effect which a shifting of position would be sufficient to produce. In actual vision, lines are never horizontal, unless they are seen in parallel perspective. In all other positions all horizontals are oblique in actual vision. To build them oblique is simply to build an effect of shifted position. When this point is once understood, it is easier to realize that the effect of optical vibra-

<sup>1</sup> *Monuments de Pise*, pl. XII (1859).

<sup>2</sup> See article 'Optical Corrections and Refinements,' in the *Dictionary of Architecture*, published by the Architectural Publication Society, printed by Thomas Richards, London, Vol. VI, p. 17.

tion or "life," which undoubtedly results, may have been the result intended.

It is my own conviction that the straightforward and bold acceptance of the irregularities incident to the use of heterogeneous material, which appears so widely in the details of this cathedral, and notably in the columns of the nave, is simply a more familiar phase of the spirit shown in building to the slope. Another illustration of this spirit is found in the careful avoidance of monotonous regularity in the masonry stripes (of white and dark green marble), a trait which is shown in all parts of the cathedral, both interior and exterior. The unfortunate results of geometrical regularity, in this particular, are shown at Siena and at Orvieto, not to speak of S. Miniato at Florence or of the Florence cathedral. (In the latter instance the irregular weathering of the surface color has mitigated the unpleasant effect of the monotonous geometrical patterns.)

Thus we may assume that the demonstrably intended asymmetries of the Pisa cathedral (and among these must undoubtedly be included those which are proven to exist by the debated levels) represent a dislike of formalism and monotony which very possibly included a preference for the vibratory optical effect which the debated asymmetries certainly produce. A distinguished New York architect, Mr. William Welles Bosworth, has recently coined the term "temperamental architecture" to cover the intentional asymmetries of mediaeval building. This term must appeal to many, as suggesting, better than any other single term, the various explanations, or the various phrasings of the same explanation, which may occur to other critics.

Once more, however, and in conclusion, the point is urged that it is not the purpose of this article to debate questions of aesthetics. These cannot long remain in doubt when the constructive facts are established. It has been the opinion of a certain school of antiquarians up to date that all differences of level in the Pisa cathedral are due to subsidence. It is in order to offer conclusive evidence on this particular head that this article is published.

WILLIAM H. GOODYEAR.

BROOKLYN, 1910.

FURTHER NOTES ON JUSTUS VAN GHENT

THE following may be of interest to those who have read my 'Notes, etc.,' printed in the last number of this JOURNAL. Shortly after my first article went to the press, I happened to visit the ducal picture gallery in Altenburg (Saxe Altenburg). This gallery, among many fine works of Italian primitives, possesses a curious painting on canvas (Fig. 1). It represents, on golden ground, the dead Christ held up by three elderly men. Only the upper half of the body of Christ and the heads of the supporting men can be seen. Over the scene is a banderole, bearing the inscription: *Honor et benedictio crucifixo filio qui nos suo supplicio redimit ab auxilio*.<sup>1</sup> The whole is enclosed by a painted frame which is decorated with flowers, leaves, snakes, and butterflies. In the middle of the bottom part of this frame there is an escutcheon with a crowned standing lion. This last is apparently a later addition to the picture. Although the painting has been terribly damaged and its color is almost entirely gone, so that it produces almost the impression of a monochrome, there is enough beauty in the composition and drawing to make it apparent that the author of it must have been an important master. There is sufficient external and internal evidence, I believe, at our disposal to prove, almost beyond doubt, that this master could have been no other than Justus van Ghent. The account books of the fraternity of Corpus Christi in Urbino (the same for which Justus painted the famous picture at Urbino, the Communion of the Apostles) contain, under the year 1475, the following note: *Giugno . . . E più tela a M<sup>ro</sup> Giusto de pentore che diceva voler fare un insegna bella per la fraternita* (cf. Crowe and Cavalcaselle, *The Early Flemish Painters*, Ger-

<sup>1</sup> Sic! it should be, of course, "*exilio*."



FIGURE 1.—PIETÀ, BY JUSTUS VAN GHENT. ALTENBURG; LINDENAU MUSEUM.

man edition, p. 190). This means that in June, 1475, our painter received canvas from the fraternity, which he said he would turn into a "beautiful ensign." I think in the Altenburg canvas we have this ensign before us. The Baron von Lindenau, founder of the gallery, received the picture as a premium from a Roman picture dealer whose customer he had been for some time.<sup>1</sup> At that time, *i.e.* in the thirties of the last century, it was attributed to Antonello da Messina. The painting will not fail to impress the student as a banner that was used in religious processions. Especially in Umbria such "gonfaloni" were popular, and a number of them, although without exception on a larger scale, have come down to us and can be studied in the hill towns of this province. That it was not intended for framing, is shown by the circumstance that it has a *painted frame*. The decoration of this frame, the flowers, snails, etc., occurs frequently on Central Italian pictures of the period, but never on Flemish pictures. (Cf. the small Madonna of Giovanni di Paolo in Altenburg, reproduced in the catalogue of the gallery, which shows a similar treatment.) The composition is also Italianizing. We can find the same in "Pietàs" of Venetian or Northern Italian origin. The treatment of the hair and draperies is very similar to that in the "Communion of the Apostles" in Urbino and the "Epiphany" in Trevi, which last I published in my preceding article. The Trevi picture, however, is not as fine as the one in Altenburg and betrays a hasty execution. In spite of the several characteristics, which seem to indicate that the picture was painted in Italy,<sup>2</sup> there is enough in it to show the artist's affinity to Hugo van der Goes. I have in mind the several "Pietàs" commonly attributed to H. van der Goes, some of which were grouped and published by Joseph Destree in *L'Art Flamand et Hollandais*, 1907, p. 168 sqq. According to a friendly communication of Director Friedländer, of the Royal Print Room, Berlin, there is a replica of this canvas in the Bargello, Florence. I could not find it, how-

<sup>1</sup> This last information, as well as the photograph of the painting, I owe to the courtesy of Professor Felix Becker of Leipsic, the learned editor of the *Künstlerlexicon*.

<sup>2</sup> The two heads, to the right and left of Christ, bear witness to the artist's acquaintance with the works of Piero della Francesca.



ever, in the catalogue of Supino, nor was I able to secure a photograph of it. It is perhaps worth mentioning that in the old catalogue of Baron von Lindenau the canvas is regarded as a processional banner. It is only natural to suppose that this painting was intended for a Corpus Christi fraternity. No more appropriate subject than the one represented in it could be found for such a work; it is the Body of Christ. The types of the heads afford analogies to the other works of Justus; I have especially in mind the tapestry in Boston, published by me in this JOURNAL in my previous article on Justus.

In the gallery of the castle at Urbino there is a "Pietà" by Giovanni Santi, of pentagonal shape, which could have been inspired by the Altenburg canvas. Especially the prominent place given to the hands and their somewhat gross forms make one think so. This picture is reproduced in Calzini, *Urbino e i suoi monumenti*, p. 118.

Passavant alludes in his *Raffael* (German edition, Vol. I, p. 431) to six small panels with apostles in the sacristy of the cathedral, and to a tempera picture with the preaching of St. John the Baptist in the sacristy of the Oratorio di San Giovanni Battista, both in Urbino. All these, he thought, showed the influence of Justus very plainly. I have not been able, however, to trace these paintings.

The passage in Vespasiano Fiorentino, *Vite di uomini illustri* (ed. Cardinal Mai in *Spicilegium Romanum*, tom. I, Romae MDCCCXXXIX), which is the basis for all our knowledge of Justus' activity in Urbino, runs as follows: "*Della pittura n' era intendentissimo*;<sup>1</sup> *e per non trovare maestri a suo modo in Italia che sapessino colorire in tavole a olio, mando insino in Fiandra per trovare uno maestro solenne, e fello venire a Urbino, dove fece fare molte pitture di sua mano solennissime: e massime in uno suo istudio, dove fece dipingere i filosofi, e poeti, e dottori della così greca come latina, fatti con uno maraviglioso artificio; e ritrassevi la sua Signoria al naturale, che non gli mancava nulla se non lo spirito. Fece venire ancora di Fiandra maestri che tessano panni d'arazzo. . . .*"

The words "*e ritrassevi la sua Signoria*" have been hitherto

<sup>1</sup> Vespasiano is speaking of Federigo da Montefeltre



interpreted "and he portrayed his duchess." This is wrong, however, for it is plain that Vespasiano means "and he por-



FIGURE 2.—MADONNA, BY JUSTUS VAN GHENT. BERLIN; SCHLOSS.

trayed there (*i.e.* in the studio) his lordship," and that he means the portrait now in the Barberini gallery.

The fact that Vespasiano tells us that Federigo made tapestry weavers come from Flanders makes it probable that Justus furnished them with designs. Further research will probably

lead to the recognition of other tapestries than the one published by me, as having been designed by Justus.

Dr. W. R. Valentiner, of the Metropolitan Museum of Art, New York, was so friendly as to call my attention to a group



FIGURE 3.—MADONNA, BY JUSTUS VAN GHENT. FLORENCE ; PALAZZO CORSINI.

of pictures, which in his opinion can be safely regarded as works of Justus van Ghent or his pupils. I will first enumerate these works and then give my observations regarding them.

1. Berlin, Königliches Schloss : Madonna and Child.
2. Florence, Palazzo Corsini : Madonna and Child.
3. Rome, Palazzo Corsini : Mater Dolorosa.
4. Philadelphia, Collection of Mr. Johnson : Crucifixion (this panel was formerly in the Kums Collection, Antwerp).
5. Berlin, Kaiser Friedrich Museum (No. 526) : Madonna and Child with donors.
6. Turin, Royal Gallery : Madonna and Child in a Gothic room.

1 and 2 could be by Justus van Ghent (see Figs. 2 and 3). Especially the Berlin picture, when compared to the portrait of Battista Sforza with Guidobaldo Montefeltre on the Urbino "Communion," makes this probable. The fact that there is nothing in these two paintings that would remind one of Italy makes me incline to believe that they belong to Justus' activity before he came to Italy. This is, however, a hypothetical conclusion and, like the attribution itself, is open to discussion. The modelling of the faces and of the hands is similar to that in other works of Justus, although these works impress one as being less mature than, for instance, the Urbino "Communion." The type of the Madonna betrays in these pictures, in spite of reminiscences of Hugo van der Goes, a great deal of individuality.

The "Mater Dolorosa" of the Corsini palace, Rome, is, so far as I can see, also a work of Justus van Ghent (see Fig. 4). The architectural background is Italian (one might think of the architecture of Luciano Laurana, the Dalmatian architect of Federigo), but the Virgin is almost purely Flemish. There is a swing to the drapery, however, that goes beyond the capacity of a local artist of the Netherlands who has not seen works of Italian masters of the Renaissance.

Mr. Johnson's picture is the most remarkable work of art among the paintings listed above (see Fig. 5). It is most delicate in finish, masterly in characterization, and especially successful in the rendering of sorrow. The figure of Christ is almost identical with that on the Boston tapestry (see the

reproduction in my preceding article), where the Crucifixion is represented in the last compartment to the right. The St. John of Boston also resembles the one in the picture in question. The heads of the male figures might have been influenced by Piero della Francesca. This picture is the finest of all the works that can be attributed to Justus and it is in a fine state of preservation.

No. 5 of my list does not seem to justify an attribution to Justus or his school; it is more likely the work of a follower of Roger van der Weyden.

Nor can I see any affinity to Justus' work in No. 6, the small Madonna of the Turin gallery. This picture ap-



FIGURE 4. — MATER DOLOROSA, BY JUSTUS VAN GHENT. ROME; PALAZZO CORSINI.

pears to be earlier than those hitherto considered, and it shows the dependence of its author on the school of Jan van Eyck.

I am aware of the fact that my attributions will probably not meet with the approbation of all students of the problems touched upon in this and the previous article. Still, I indulge in the



FIGURE 5.—CRUCIFIXION, BY JUSTUS VAN GHENT. PHILADELPHIA; JOHNSON COLLECTION.

hope that these articles, which form the first attempt to reconstruct the "oeuvre" of Justus van Ghent, will not be without profit to further research. We know very few individualities among the primitive artists of the Netherlands, while the number of anonymous works is enormous; therefore it seems to me good service to the history of art, to try to add new personalities—and the artistic personality of Justus was a very obscure one, up to the present moment.

MORTON H. BERNATH.

BERLIN, 1910.

## THE CHORAGIC MONUMENT OF NICIAS

THE study of the choragic monument of Nicias, of which most of the architectural remains, built into the central portion of the Beulé Gate before the Acropolis at Athens, were uncovered by E. Beulé<sup>1</sup> in 1852, actually begins with the analysis of the remains by Professor Dörpfeld in 1885.<sup>2</sup> Four years later he discovered a foundation for the building,<sup>3</sup> and it then became possible to restore more than the façade alone.<sup>4</sup> Quite recently the monument has been republished by Mr. F. Versakes,<sup>5</sup> with the following conclusions: (1) The foundations identified by Dörpfeld are discarded, and the monument placed somewhere in the precinct of Dionysus; (2) to the members identified by Dörpfeld are added a piece of a Doric column shaft and a capital, also the central block of a tympanum, while, on the other hand, the *poros* triglyphs assigned by Dörpfeld to the monument are rejected and replaced by marble; (3) the choragic inscription of 320/19 is not contemporary with the epistyle on which it is cut, but is a later addition, while the monument itself really dates from the end of the fifth century, and was erected by the general Nicias (Plutarch, *Nicias*, 3). The present article, which is in part composed of notes made at intervals in the past two years with regard to the architectural members, is occasioned by the identification of the foundations of the monument.

I begin with the blocks on which rests the identification of the monument, the epistylia, three of which from the centre

<sup>1</sup> *L'Acropole d'Athènes*, 1853, I, 100-106.

<sup>2</sup> *Ath. Mitt.* X, 1885, pp. 219-230, pl. VII.

<sup>3</sup> *Ath. Mitt.* XIV, 1889, pp. 63-68.

<sup>4</sup> Plan and partial perspective in Jahn-Michaelis, *Arch Athenarum*<sup>6</sup>, 1901, tab. XXXII; plan and complete perspective in Luckenbach's *Acropolis von Athen*<sup>2</sup>, 1905, pp. 11 and 49.

<sup>5</sup> *Τὸ μνημεῖον τοῦ Νικίου*, 'Εφ. 'Αρχ. 1909, 221-238.

American Journal of Archaeology, Second Series. Journal of the Archaeological Institute of America, Vol. XIV (1910), No. 4.

of the façade bear the dedicatory inscription.<sup>1</sup> Dörpfeld notes six blocks in which the end joints are cut through regulae and so were supported by columns, and seven in which the joint is at one side or the other of a regula, taking advantage of a continuous supporting wall below. We may likewise form two classes, according to the thickness of the epistylia; all those which Dörpfeld placed above open intercolumniations are 0.388 m. thick, and those which were set upon solid walls are

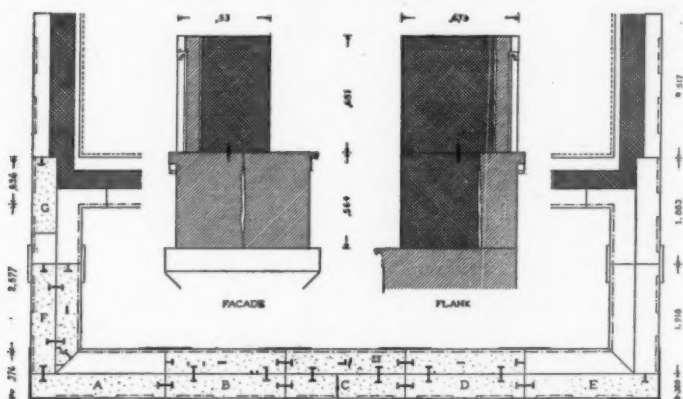


FIGURE 1. — PLAN AND SECTIONS OF EPISTYLE.

0.22 m. to 0.25 m. thick, with the exception of one, which is of the 0.388 m. type. Those which are 0.388 m. thick had marble antithemata, likewise 0.388 m. thick, four of which now remain, built into the topmost course of the Beulé Gate. Those epistylia which are 0.22 m. to 0.25 m. thick were probably made so from motives of economy, and must have been backed by *poros*; they could have been carried only on the walls of the cella, the ceiling of which would conceal the *poros* backing (Fig. 1).

<sup>1</sup> I.G. II, 1246:

NI · ΙΑΣΝΙΛΟΔΗΜΟΥΕΥ · ΕΤΑΙΩΝΑΝΕΘΗΚΕ  
 ΝΙΚΗΣΑΣΧΟΡΗΓΩΝΚΕΚΡΟΡΙΔΙΡΑΙΔΩΝ  
 ΡΑΝΤΑΛΕΩΝΣΙΚΥΩΝΙΟ · ΗΥΛΕΙΑΙΣΜΑΕΛΓΗΝΩΡ  
 ΤΙΜΟΘΕΟΥΝΕ · · (ΜΟΞΗΡΧΕ



Of the six preserved thick epistylia that spanned intercolumniations, Dörpfeld assigned five to the façade (three inscribed blocks, *B*, *C*, *D*, and two angle blocks, *A*, *E*, in Fig. 1) and one to the left flank, immediately adjoining the front corner.<sup>1</sup> The façade would thus seem to have been hexastyle, and this is confirmed by evidence from the geisa, as will be shown. On each flank, instead of the two columns restored by Dörpfeld, the present evidence calls for only one, that at the angle. Because the existing epistyle from the side return of the colonnade (*F*, identified by its having a sixth of a regula at one end,

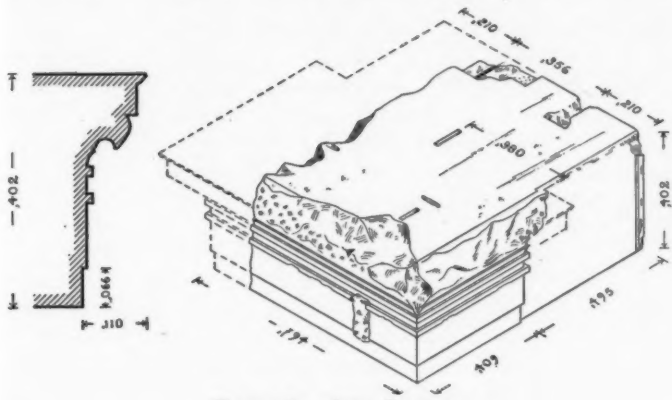


FIGURE 2. — ANTA CAPITAL.

the complement of the five-sixths cut on the end of the angle block) has at the other end a joint under the centre of a triglyph, it was inferred that this end did not rest on an anta, or advantage would have been taken of the opportunity to secure a longer bearing, a full triglyph width. This was the origin of the second open intercolumniation in Dörpfeld's restoration. Just inside the Beulé Gate, however, lies an anta capital, hitherto unidentified, from the Nicias monument (Fig. 2),<sup>2</sup> of a type re-


<sup>1</sup> *Ath. Mitt.* X, 1885, pl. VII; the block last mentioned is there lettered *K*.

<sup>2</sup> One side is chipped away; the other shows the return of the anta, 0.400 m. wide, nearly the 0.423 m. triglyph width given by the regulae of the epistyle of Nicias. Lewis hole, clamps, dowels, and pry cuttings, and the protecting lip at the edge of the vertical joint (a sign of incompleteness in the fourth century and later, corresponding to the *werkzoll* over the entire surface in the fifth century)

sembling those of the smaller order of the Propylaea, and exactly like those of the monument of Thrasyllus.<sup>1</sup> The dowel cuttings on the block are exactly right for the epistyle and its antithema, and, moreover, indicate a joint above the centre of the anta; that is, under the centre of a triglyph. In this building the opportunity for a longer bearing above the anta capital was not grasped, and the evidence for the second column on the flanks no longer exists. The single epistyle which, as was noted above, rested on a solid wall, but is shown by its thickness (0.388 m.) to have had a marble antithema, and therefore cannot have been on the cella wall, must be placed on the parastas at one side of the pronaos. In this position it would abut on the first epistyle (*F*) on the flank, if the missing end of the block were restored (*G* in Fig. 1); the preserved end is a metope space, and abutted on a regula at the end of one of the thin epistylia on the cella wall; a shift cutting which was at the middle of the back of this block *G* indicates that it must be restored as the shortest epistyle in the building

$$\left(\frac{T}{2} + M + T + M = 1.883 \text{ m. long}\right).$$

The arrangement of the thin epistylia will be considered later.

The four existing epistyle antithemata 0.388 m. wide can be assigned to their original positions, as shown in Figure 1, from the position of the clamps binding them to the epistyle facing. This course must have been continued across the front wall of the cella, but with thin blocks backed by *poros*, as on the side walls of the cella. The two jambs of the present doorway of the Beulé Gate are composed of these blocks, identified by their height (0.564 m., as in the epistylia), and by the fact that along their upper edge was a moulding — now hacked away — which, like that of the epistyle antithemata, was 0.110 m. high; they have  clamps and lewis holes, as should be expected.<sup>2</sup>

are exactly like those of the epistylia. The width of the block, as it may be restored from the spacing of the lewis and the clamps (Fig. 2), is correct for receiving the soffit of the epistyle of the Nicias monument, 0.776 (2 x 0.388) m. wide.

<sup>1</sup> Stuart and Revett, II, ch. IV, pl. IV.

<sup>2</sup> One end of each has been cut off, so that the present lengths are only 3.79 m.; but, judging from the positions of the lewis and clamp cuttings, the original lengths were probably two intercolumniations, 4.188 m.; though these

To the building of which the epistylia formed a part the geisa now built into the Beulé Gate unquestionably belong, as Dörpfeld has proved.<sup>1</sup>

Eight of these geisa are in the gate, and I have seen ten other pieces. Three of these latter are different from all the others in having sloping tops and rafter cuttings (b in Fig. 3); upon these, therefore, must have rested a sloping roof.<sup>2</sup> All the others, with flat tops, show by this very contrast that the building was not hip-roofed, but that it had at

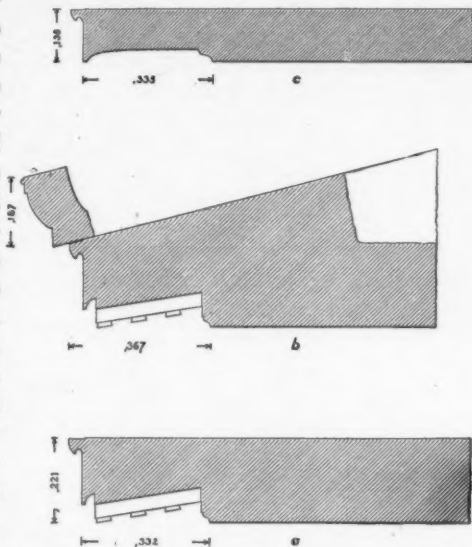


FIGURE 3. — GEISA OF THE MONUMENT OF NICIAS.

least one pediment, of which they formed the floor (a in Fig. 3). When the Nicias monument was dismantled, the joints between the ordinary geisa of the façade, disregarding the special angle geisa, were numbered A to Θ from left to

blocks are of the thinner variety, on account of their great length, the thickness is slightly increased, to 0.28 m.

<sup>1</sup> Material (Pentelic marble), the finish of exposed surfaces and of anathyroses, the use of the protective lip at the joints, and the clamps and dowels are the same in both; and the dimensions are perfectly in accord, the mutules being equal to the regulae (0.423 m.) and the length of the normal blocks (1.047 m.) just half the intercolumniation given by the epistylia. Beulé alone denied this uniformity (*L'Acropole*, I, p. 101).

<sup>2</sup> The tops of the geisa here follow the slope of the roof, and on them rested tiles of ordinary thickness (compare the temples at Aegina and Bassae); more frequently the tops of the geisa were flat and the roof slope taken up by special eaves tiles, as in the Parthenon, Propylaea, temples at Rhamnus and Sunium, etc.; in the Erechtheum there was a peculiar system by which the angle of the roof slope was divided between the geisa and the eaves tiles.

right as one faced the monument, to enable the unskilled workmen to reset them in their new positions without such blunders as having two mutules or two viae in conjunction.<sup>1</sup> This numbering was done on the tops of the geisa while they were still in position, though, since the letters are cut with bottoms inward, the tympanum must already have been removed. After the geisa were lowered to the ground, they were numbered also on their bottoms, in the same fashion but with smaller letters;<sup>2</sup> thus unnecessary turning of the blocks was avoided. When

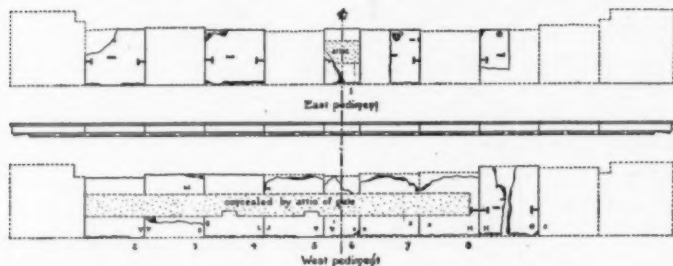


FIGURE 4.—PLAN OF EXISTING GEISA OF PEDIMENT FLOORS.

the geisa had been transported to the gate, it was seen that the space between the towers (7.45 m.) would be almost filled by seven geisa, the arrangement necessarily including the narrow central one, E-Δ. So Θ-? and H-Θ were discarded,<sup>3</sup> and, beginning at the right, H-Z was placed directly against the south tower, and then came Z-Ε, Ε-Δ, Δ-Γ, Γ-B, B-A, and A-?<sup>4</sup> until

<sup>1</sup> For some of these blocks (each normally with two mutules + two viae) have the viae to the left of the mutules, others have them toward the right, while one block (E-Δ, Fig. 4), shorter than the others, has a single mutule between two viae. Such a short block should theoretically come in the centre of the façade and form the transition between the geisa with the viae at the left and those with the viae at the right. In the Nicias monument, as in the Propylaea (*A.J.A.* XIV, 1910, p. 147), this block seems to have come actually in the centre, as is shown by the symmetrical arrangement of the dowel holes about it (for the blocks of the tympanum), even as now built into the gate (Fig. 4; the Arabic numerals give the arrangement in the gate).

<sup>2</sup> The breaking of metopes in the gate has revealed Z/Z and H.

<sup>3</sup> H-Θ now lies in halves south of the Nike bastion; one half is shown in *Εφ. Αρχ.* 1909, p. 231, Fig. 11.

<sup>4</sup> That there were only four regular geisa on each side of the central block proves that the façade was hexastyle (Fig. 4).

between the last and the north tower there remained a space of only 0.53 m. Here the builders were economical of labor, and instead of cutting down one of the rejected blocks, they took a second narrow central block, knocked off a front corner by laying on it a block of wood and giving a few strokes with the hammer, and set the remainder in the gap; the result was the conjunction of two *viae*, which it had been the aim of the designer of the gate to avoid by numbering.<sup>1</sup> This second central block, with a mutule between two *viae*, and a horizontal top, unnumbered, could have been taken only from the opposite end of the building. Both ends of the monument, therefore, had gables; it was not merely backed up against the rock, as had been supposed. To the rear gable must belong all the unnumbered ordinary geisa with flat tops, of which we have, in addition to the two pieces of the central block, four more fragments, two from the left side and two from the right, as shown in the plan, Figure 4. The hawksbeak moulding of this rear gable was peculiarly treated in block form (Fig. 5; the broken lines give the normal profile), as appears in the only two pieces in which the moulding has not been entirely broken off.

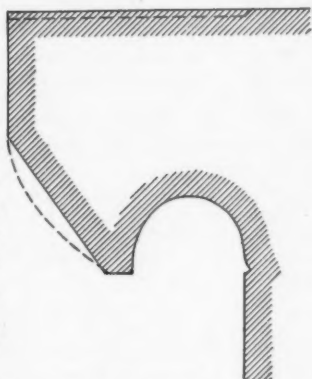


FIGURE 5. — BLOCK MOULDING OF REAR GEISON. FULL SIZE.

Between the lower epistylia and the geisa now built into the Beulé Gate is a triglyph frieze, consisting of *poros* triglyph blocks with marble metope slabs. Beulé supposed that the triglyphs were taken from an archaic *poros* building, which would imply that at the time the Nicias monument was dismantled, archaic triglyphs of exactly the right width were at hand, while those of the Nicias monument were neglected. For the widths of triglyphs and metopes exactly fit the mutules of

<sup>1</sup> The very corner which was thus knocked off now lies inside the Beulé Gate (cf. Fig. 4).

the geisa and the regulae of the epistylia, and Dörpfeld, on the grounds of dimensions, workmanship, and spacing of dowels, assigned the triglyph blocks correctly to the Nicias monument. The reason for the use of *poros* triglyphs was, as he explained,<sup>1</sup> a saving of material in the only portion of the façade which was to be entirely covered with opaque color. In his recent article, Versakes denies that these triglyphs belong to the monument, and returns to the old theory of Beulé that they are archaic.<sup>2</sup> As examples of the triglyphs of the Nicias monument he proposes some poor Roman marble fragments now in the Ascle-

<sup>1</sup> *Ath. Mitt.* X, 1885, pp. 228-229.

<sup>2</sup> *Ep. 'Apx.* 1909, pp. 231-234. His reasons are:

(1) Because the saving of material would be insignificant with only this part of the building of *poros*. But compare, for instance, the *poros* antithemata of the wall epistylia.

(2) Because the *poros* triglyphs are too thick to rest on the epistyle of the Nicias monument (being 0.675 m. from front to back, while the epistyle was 0.776 m.), and leave sufficient room for antithemata of any sort of stone. The triglyphs now in the gate, which Versakes measures, are, however, from the sides of the building (Fig. 1), and those from the façade, of which two lie inside the gate and two toward the Areopagus, were only 0.52 m. to 0.53 m. thick (see Dörpfeld's drawing, *Ath. Mitt.* X, 1885, pl. VII).

(3) Because the *poros* triglyphs are too high in proportion to the epistyle of the Nicias monument. To show that the proportions of the frieze of the Nicias monument are suitable for its date, I append a comparative table of the widths of metopes and heights of friezes, both in terms of the epistyle heights, showing also the development of the metope rectangle.

	METOPÉ WIDTH	FRIEZE HEIGHT
Corinth, Apollo . . . . .	0.812-0.819 m.	—
Aegina . . . . .	0.895-0.952 m.	0.976 m.
Olympia, Zeus . . . . .	0.871 m.	0.977 m.
Sunium . . . . .	0.887 m.	0.989 m.
Theseum . . . . .	0.926 m.	0.988 m.
Parthenon . . . . .	0.942 m.	0.998 m.
Propylaea (Athens) . . . . .	0.964 m.	1.016 m.
Bassae . . . . .	0.973 m.	1.015 m.
Rhamnus . . . . .	1.000 m.	1.000 m.
Tegea . . . . .	1.056 m.	1.036 m.
Epidaurus, Asclepius . . . . .	1.128 m.	1.123 m.
Epidaurus, Tholos . . . . .	1.086 m.	1.208 m.
Nicias monument . . . . .	1.107 m.	1.204 m.
Nemea . . . . .	1.107 m.	1.123 m.



pieum and the theatre,<sup>1</sup> due, in his opinion, to a late restoration of the monument. These triglyphs were nearly of the right width;<sup>2</sup> the corresponding geisa, however, give the metope width as 0.60 m., instead of the 0.624 m. of the Nicias monument. To show that the *poros* triglyphs must be associated with the marble epistylia and geisa, I need only emphasize Dörpfeld's points: the technique is identical, including the use of the thin lewis hole, which is unknown in early *poros* architecture and is derived from work in marble; the dimensions and proportions agree; the dowels on the tops of the triglyphs are for geisa which normally have two mutules cut on a single block;<sup>3</sup> and the dowel and pry holes on the tops of the epistylia are for triglyph blocks which have joints behind the centres of the metopes, an impossible condition unless the metopes were loose marble slabs, as in this case. Some of the marble metopes were inserted in the frieze of the gate; others were used as material for the rebuilding of the towers of the gate; and fragments lie scattered along the south slope of the Acropolis.

On the tops of the geisa of the pediment floors appear dowel and pry holes for tympanum blocks and their antithemata (Fig. 4). In the antithemata there was no central block, but a joint exactly in the centre;<sup>4</sup> and geison Θ-H shows that above it the joints of tympanum facing slabs and of antithemata practically coincided. It seemed at first probable, therefore, that this coincidence occurred throughout, as in the Erechtheum. Probing in the joints of the attic of the gate, however, disclosed what appears to be a dowel cutting for the tympanum face, and therefore a joint, about 0.83 m. from the original centre of the façade. Because the central slab was laid first,<sup>5</sup> this dowel must be included in the length of the

<sup>1</sup> *Εφ. Ἀρχ.* 1909, p. 231, Fig. 11 *a*. Restored with a height 0.64 m. to suit the taste of the *fifth* century.

<sup>2</sup> Now broken into fragments, but restored as 0.42 m. wide.

<sup>3</sup> Except on one triglyph which was prepared for the narrow geison in the centre of the façade; this triglyph now lies below the gate toward the Areopagus.

<sup>4</sup> Note the central pry-hole on geison Ε-Δ, and dowel and pry holes in Ζ-Ε and Δ-Γ for the outer ends of blocks which abutted on each other in the middle of the façade.

<sup>5</sup> This is shown by the fact that all the tympanum blocks were pried and dowelled at their ends farther from the centre of the façade; the joint lines are



central slab, which was therefore approximately  $2 \times 0.83 = 1.66$  m. long.

With this favorable evidence, we may accept the identification by Versakes<sup>1</sup> of a central tympanum slab 1.637 m. long, now lying near the precinct of Dionysus,<sup>2</sup> as from the monument of Nicias. Its workmanship and details of fastenings agree perfectly with those of the other members. With this must be associated another slab from the tympanum, now lying below the Beulé Gate; a difference of 4 mm. in the height at the first joint at the right of the centre shows that it did not abut

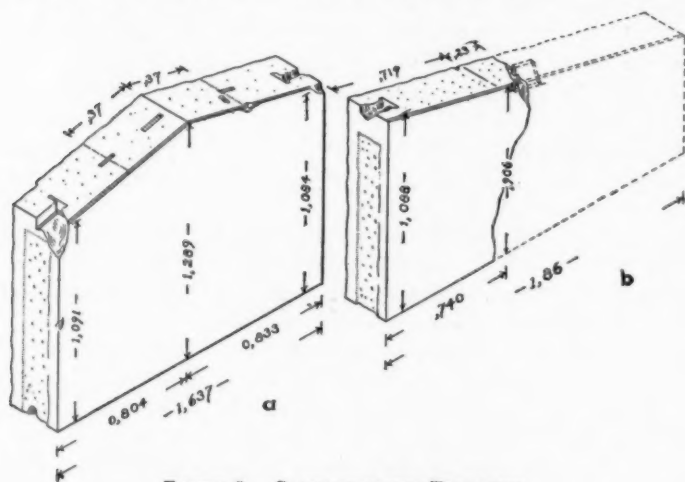


FIGURE 6.—SLABS FROM THE TYMPANUM.

on the extant central slab, so that it must belong to the other pediment of the same building (Fig. 6).<sup>3</sup> In both of these slabs the slopes are 1 in 4.065, slightly steeper than in the Parthenon (1:4.138) or the Propylaea (1:4.167). This agrees therefore always at the outer ends of the dowel holes, toward the pry cuttings (Fig. 4).

<sup>1</sup> *Ep. 'Apx.* 1909, p. 223, Fig. 7.

<sup>2</sup> Found near the east end of the stoa of Eumenes.

<sup>3</sup> This second slab (Fig. 6 *b*) is now only 0.92 m. long, but if we restore its length by assuming that the lewis hole was approximately at its centre, it will fill the 1.84 m. remaining between the central slab and the joint indicated on geison Θ-H. The elevation of the tympanum jointing is shown in Figure 10.

with the slope of the tops of the flank geisa, as well as they can be measured. The height of the central slab is 1.289 m.; at the given slope, the base of the tympanum would then be 10.480 m.; the width of the façade across the epistyle was 10.894 m., and along the crowning moulding of the horizontal geison, 11.634 m., so that at either end of the tympanum there remained 0.577 m. of the horizontal geison to receive the bevelled ends of the raking geisa.

If 0.577 m. be the length of the bed of the raking geison on the horizontal geison, the height of the raking geison, the given slope being 1 in 4.065, will be 0.138 m. A fragment of raking geison on the south slope of the Acropolis (for knowledge of which I am indebted to Mr. G. P. Stevens, who suggested that it might belong to the monument of Nicias) has exactly this height, 0.138 m. (see Fig. 3 *c*); and the projection of its face beyond the bottom of the bed moulding (0.335 m.) associates it with the Nicias geisa (projection 0.332 m.). The total projection, including the crowning moulding, was evidently the same in both cases, 0.367 m.; for the hawkbeak of the raking geison, now partially broken away, was slightly smaller than that of the horizontal geison (0.033 m. instead of 0.040 m. high). The most remarkable feature of this raking geison is its disproportionate thinness, its height being only about five-eighths of that of the horizontal geison. It is unknown whether the lower end blocks of the raking geisa were cut to a feather edge, or had the extreme end cut on the horizontal geison, or were combined with the sima and acroterion base, as in the Propylaea. At the apex of the pediment the geison was cut as a saddle, the dimensions of which are given by a bed cutting on the central tympanum slab (Fig. 6). The tympanum slabs likewise give the length of a typical raking geison as 1.19 m.

Of the sima of the Nicias monument nothing has as yet been identified. It is probable, however, that we may assign to the building a small piece of Greek eaves sima, found near the stoa of Eumenes (Fig. 3 *b*). It is an imitation of the Periclean profile, similar to, but much later than, the sima of the temple of Athena Nike. Its bed is designed for flank geisa with sloping tops. And if we compare the cornice of this monument with that of its prototype, the central building of the Propylaea,

which had the geison (to top of hawksbeak) 0.393 m. high and sima 0.331 m. high, we find that in the monument of Nicias, with a geison 0.221 m. high, the sima should be 0.186 m., and ours is 0.187 m.

A fragment of an acroterion base from the apex of a pediment, now lying inside the Beulé Gate, seems from its scale and workmanship, and because it has a joint at the apex above a saddle-shaped geison block, to belong to the Nicias monument.<sup>1</sup> As restored from this block, the acroterion base would be only 0.880 m. wide, too small for a choragic tripod; and it carries

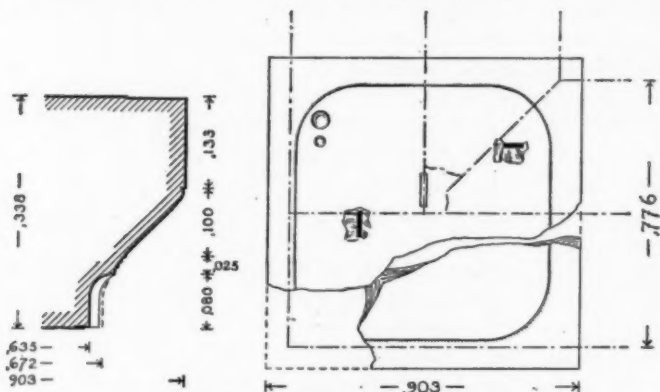


FIGURE 7.—CAPITAL OF ANGLE COLUMN.

no traces of any attachments. The choragic tripod, about 2 m. high, would be too unwieldy to crown a pediment of such small scale, and was almost certainly placed in the cella.

The most important addition of material made by Versakes is a Doric capital now east of the Parthenon, together with the lower drum of a shaft now in the theatre. The two agree with each other in technique and scale, and are of the right scale for the Nicias monument, though it is strange that one of the capitals should have been transported to the top of the Acropolis. A capital exactly like that identified by Versakes is shown by Stuart and Revett,<sup>2</sup> who saw it in a ruined church in the Turk-

<sup>1</sup> The slope of its bed, practically 1 in 4 as nearly as can be measured, is slightly steeper than usual and would well fit the monument.

<sup>2</sup> Vol. IV, ch. V, pl. VIII, 6.

ish cemetery below the west end of the Acropolis, a region full of remains of the monument of Nicias. I measure the lower diameter of the column as 0.844 m. (twice the triglyph width), and the upper diameter (on the capital) as 0.672 m., four-fifths of the lower. The height of the capital (0.338 m.) is the same as that of the anta capital (0.336 m.). The technique appears to be that of the fourth century: both capital and drum have lewis holes, and both were fastened to the other drums by small round dowels 0.05 m. in diameter and 0.09 m. high (0.045 m. in each stone); the top of the abacus has a square relieving surface with rounded corners. The capital is shown in photograph and profile by Versakes.<sup>1</sup> For the sake of completeness I add a plan of the abacus (Fig. 7), showing how it will fit the epistyle; it is an angle capital, and its dowels show that it supported an epistyle in two beams, jointed at the angle in a manner that coincides with the evidence from the epistylia themselves (Fig. 1).

The height of the columns cannot be obtained with accuracy, though the error can be reduced to a minimum. From a comparative table of the ratios of intercolumniation to height of column and entablature together, and of the entablature to the column height,<sup>2</sup> it appears that the height of the order should be more than three intercolumniations (6.282 m.), but considerably less than what the Nemean ratio would give (7.161 m.). Subtracting the entablature (1.464 m.), the columns should be between 4.818 and 5.697 m. in height, on an average 5.25 m. The ratio between entablature and column heights should

<sup>1</sup> Εφ. 'Αρχ. 1909, p. 232 (Fig. 12), p. 236 (Fig. 15).

<sup>2</sup>

	INTERCOL. : ORDER	ENTAB. : COLUMN
Aegina . . . . .	1 : 2.85	1 : 2.62
Olympia, Zeus . . . . .	1 : 2.79	1 : 2.55
Theseum . . . . .	1 : 2.04	1 : 2.86
Parthenon . . . . .	1 : 3.19	1 : 2.43
Bassae . . . . .	1 : 2.85	1 : 2.97
Propylaea: east hexastyle . .	1 : 3.11	1 : 3.15
west hexastyle . .	1 : 3.18	1 : 3.24
west wings . . . .	1 : 3.10	1 : 3.05
Nemea . . . . .	1 : 3.42	1 : 4.17

be greater than any in the Propylaea; 1:3.64, an average between the Propylaea and Nemea, would give 5.27 m. The anta capital gives the regular height of courses as 0.402 m.; the orthostates were probably, as usual, a little more than twice as high, or about 0.90 m. These orthostates and eleven ordinary courses would make up a height of 5.32 m., which we may definitely assume as the height of the columns. It is interesting to note that, if we subtract the height of the capital (0.338 m.) from this, the height of the shaft proper (ca. 4.98 m.) is exactly three times the height of the lowest drum identified by Versakes.<sup>1</sup>

As for the site of the choragic monument of Nicias, the earliest and most obvious suggestion was that it was on the Street of the Tripods, or near the temple of Dionysus.<sup>2</sup> Dörpfeld at first suggested<sup>3</sup> the spot just below the Nike bastion, which Lolling afterward identified as the heroum of Aegeus;<sup>4</sup> Dörpfeld's final opinion was that the lofty breccia foundations of some structure which was demolished to make way for the odeum of Herodes Atticus (immediately after 160 A.D.), and some portions of which remain just north of the odeum, had formerly supported the monument.<sup>5</sup> This has been universally accepted, although there has been an undercurrent of suggestion that the monument of Nicias should be identified with that of the elder Nicias, which Plutarch saw down near the theatre — a suggestion which has always been rejected even by those who proposed it, Dörpfeld, Reisch, and Furtwängler.<sup>6</sup> Furtwängler's abandoned proposal was adopted and affirmed by Versakes;<sup>7</sup> and for many reasons this suggestion seemed to me to

<sup>1</sup> The top is now broken away ('Eφ. 'Aρχ. 1900, p. 227, Fig. 9); but from the bed to the bottom of a dowel hole at the present top is 1.60 m., and the dowel hole was 0.05 m. deep, so that we may restore the original height as 1.65 m. (see Fig. 10).

<sup>2</sup> Beulé, *L'Acropole*, 1853, I, p. 103; Rangabé, *Ant. hellén.* II, 1855, p. 705.

<sup>3</sup> *Ath. Mitt.* X, 1885, pp. 225-226.

<sup>4</sup> *Ath. Mitt.* XI, 1886, pp. 322-323; XIV, 1889, p. 63.

<sup>5</sup> *Ath. Mitt.* XIV, 1889, pp. 63-66.

<sup>6</sup> Dörpfeld, *Ath. Mitt.* X, 1885, p. 226; Reisch, *Griech. Weihgeschenke*, 1890, p. 100, note 2; Furtwängler, *Sitzungsb. d. k. b. Akad. München*, 1901, p. 414, note 1, but with acceptance of Dörpfeld's theory, p. 415, note 2.

<sup>7</sup> 'Eφ. 'Aρχ. 1900, p. 237.

have elements of probability, especially when it appeared that an unidentified foundation suited perfectly, in date, dimensions, and position. At the time of writing his article, Versakes had not yet determined the foundations. He saw that there were difficulties connected with the site proposed by Dörpfeld, and that a site near the theatre was more probable, especially because here lay some of the larger fragments (column shaft and central tympanum slab) which he ascribed to the monument. Versakes has since, and independently, come to the conclusion that the foundation herein described is that of the monument of Nicias. Professor Dörpfeld's identification of the foundations which he thought were those of this monument rested on their material (breccia as in buildings of the fourth century and later) and their plan: the latter would give a building with a façade (*Fassadenbau*), without a rear wall, backed up against the rock, such as was the contemporary monument of Thrasyllus.<sup>1</sup> Apart from material and plan, there is, however, in the foundations themselves no evidence in favor of the identification; they give neither the width nor the length of the building, and the thickness of the walls (1.35 m.), advanced as evidence<sup>2</sup> that they bore columns and steps, is insufficient,<sup>3</sup> and is probably due merely to the great weight of the foundations themselves. At their present level (probably almost the ancient level) these foundations require the omission of the rear wall; and there seems to be no possibility of a rear wall on the top of the rock behind, even if the foundations could be raised to the abnormal height then required;<sup>4</sup> whereas the architectural fragments (geisa and tympana) show that the Nicias monument was a free-standing building, with both ends exposed. The site, so far west of the

<sup>1</sup> Dörpfeld, *Ath. Mitt.* XIV, 1889, p. 64. Rear walls are restored, however, by Jahn-Michaelis, *Arch. Athenarum*<sup>3</sup>, 1901, Tab. VII; Luckenbach, *Akropolis von Athen*<sup>2</sup>, 1905, p. 11; and Judeich, *Topographie von Athen*, 1905, plan II.

<sup>2</sup> *Ath. Mitt.* XIV, 1889, p. 65.

<sup>3</sup> The similar foundations of the second temple of Dionysus Eleuthereus are 1.45 m. thick for the walls, and 1.90 m. thick for the portico (Dörpfeld-Reisch, *Griech. Theater*, p. 20).

<sup>4</sup> The wing walls (cf. 'Ep.' *Apex*. 1909, p. 226, Fig. 8) afford no argument one way or another, as they would no more be an integral part of the building than the wing walls of the greater Propylaea at Eleusis (*Antiq. of Attica*, ch. II, pls. 1 and 2).

theatre, would be unique for a choragic monument;<sup>1</sup> and this would require two separate Nicias monuments, that of 320/19 and that of the general Nicias (before 415), which is improbable, as will be shown. This site, too, would require the date 160 A.D. for the destruction of the monument and the building of the Beulé Gate, which again seems improbable.

The plan of the superstructure of the Nicias monument would seem to require foundations of the T-shape that appears in other prostyle buildings of the fourth century and the end of the fifth, such as the second temple of Dionysus Eleuthereus at Athens, the temples of Despoina at Lycosura and of the Cabiri in Samothrace, and the third temple of Athena Pronaia at Delphi. For it is probable that the steps of the façade would be carried around the sides of the building only as far as the open intercolumniation extended, and would then return against the side walls, their lines being continued as a socle of slight projection. The width of such a foundation should be, on the façade, the length of the five epistylia, 10.893 m., and, in addition, the projections of the columns and steps.

South of the east end of the stoa of Eumenes are the foundations of a building, hitherto unidentified.<sup>2</sup> At the east, one to three courses of breccia remained above ground, and above these one course of Acropolis rock was finished as if intended to be visible; at the north this wall turns westward, forming the north wall, the top of which had been laid bare for 10 m.; the southeast corner was broken away, but a long stretch of the south face of the south wall had been excavated to a depth of one to two courses. The date of the foundation is clearly earlier than that of the stoa of Eumenes; for it is at a much lower level, and it is evident that the stoa was built with

<sup>1</sup> The fragment of the dedication of Chares, of 344/3 (*J.G.* II, 1240), used as a well cover N.E. of Dörpfeld's foundation (shown on Middleton's plan, *J.H.S. suppl.* III, pl. 18, No. 37), had evidently been transported from a distance; Miss Bieber's suggestion (*Ath. Mitt.* XXXV, 1910, p. 15), that a foundation west of the Asclepieum (No. 29 on Middleton's plan, *l.c.*) supported a choragic monument, is impossible.

<sup>2</sup> Köhler supposed that it might be a temple, *Ath. Mitt.* III, 1878, p. 153; but the façade was toward the west. It appears on the plans of Mitsakes, *Πρακτικά*, 1878, pl.; Loviot, *B.C.H.* II, 1878, pl. XXIII (entirely wrong); Ziller, *Ath. Mitt.* III, 1878, pl. VII (the best); Middleton, *J.H.S. suppl.* III, No. XXIII; and Judeich, *Topographie von Athen*, plan II.



regard to it. On the other hand, the use of breccia in the foundations would seem to make it not earlier than the fourth century, or at most the end of the fifth, so that its date would be suitable for Nicias (320/19 B.C.). The width of the building, from outside to outside of the foundations, is 11.79 m.; but the west end of the south wall projects southward 0.71 m. for a length of 4.10 m., giving, if we make the north side symmetrical, the desirable T-shaped plan, with a façade width of 13.21 m. Though no traces of the west façade were visible, it seemed that the westernmost stone of the south wall was the south-

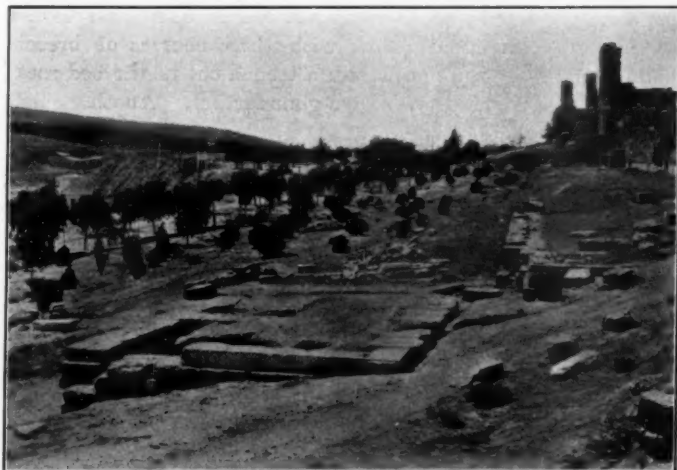


FIGURE 8. — FOUNDATIONS OF THE MONUMENT OF NICIAS.

west corner; for while all the other blocks are about  $0.70 \times 1.40$  m. in plan, laid regularly as headers and stretchers, this block is  $1.00 \times 1.40$  m., and though it had been thrown slightly out of place by earthquakes (Fig. 8, in centre), it was clear that its end was exactly above the west end of the course below, as if the wall continued no farther. The length of this projecting ear is just that required for the single intercolumniation on the flank of the monument, and the total length, 16.68 m., is such as to give exactly six epistylia of the arrangement required on the flank of the monument (in addition to the short

returns of those on the ends), and allow the same excess of foundation at the ends of the building as we should have on its sides.<sup>1</sup>

Moreover, the architectural remains of the monument of Nicias that were not found at the Beulé Gate lie scattered about this foundation: the column shaft, the central tympanum block (which was found much nearer the foundation than its present position), two horizontal geisa, etc.

The identification of the site was certain even before excavations began.<sup>2</sup> Trial trenches were made on April 15 and 16, and work at intervals between April 29 and May 25, 1910, completely cleared the foundations. The southwest corner appeared in perfect condition, with three courses of breccia ending one above another, set in a trench cut in the bed rock, so that the wall could never have gone farther. Another small

<sup>1</sup> Width of façade: foundations	. . . . .	13.21 m.
epistyle	. . . . .	10.893 m.
excess	. . . . .	2.32 m.
excess each side	. . . . .	1.16 m.

Width of body: foundations	. . . . .	11.79 m.
epistyle	. . . . .	10.893 m.
excess	. . . . .	0.90 m.
excess each side	. . . . .	0.45 m.

Composition of flank epistyle:

(1) return from front, $\frac{1}{2} T$	. . . . .	0.388 m.
(2) $\frac{1}{2} T + M + T + M + \frac{1}{2} T$ (stone F.)	. . . . .	1.918 m.
(3) $\frac{1}{2} T + M + T + M$ (stone G.)	. . . . .	1.883 m.
(4) $T + M + T + M + T$	. . . . .	2.517 m.
(5) $M + T + M + T + M$	. . . . .	2.718 m.
} narrow epistylia		
(6) $T + M + T + M + T$	. . . . .	2.517 m.
(7) $M + T + M + T + M$	. . . . .	2.718 m.
(8) return from rear, $T$	. . . . .	0.423 m.
total length of flank	. . . . .	15.082 m.

Length of flank: foundations	. . . . .	16.68 m.
epistyle	. . . . .	15.082 m.
excess	. . . . .	1.60 m.
excess on front (= sides of façade)	. . . . .	1.16 m.
excess at rear (= sides of body)	. . . . .	0.46 m.

<sup>2</sup> Permission to excavate the monument was obtained from Mr. Panagiotopoulos, Minister of Public Instruction, through the kindness of Mr. Byzantinos. The prosecution of the work, which was carried on at the expense of the American School of Classical Studies, was greatly facilitated by Mr. Skias.

pit uncovered the northwest angle; only the single angle stone here remained, and further cleaning revealed only the rock-hewn beds for the walls. The excavations yielded one new fact of importance for the plan, the position of the cross wall. The present state of the foundations appears in Figure 9; where actual walls remained, the depth of earth removed was only 10 to 20 cm. Lying on the cross wall were a piece of the

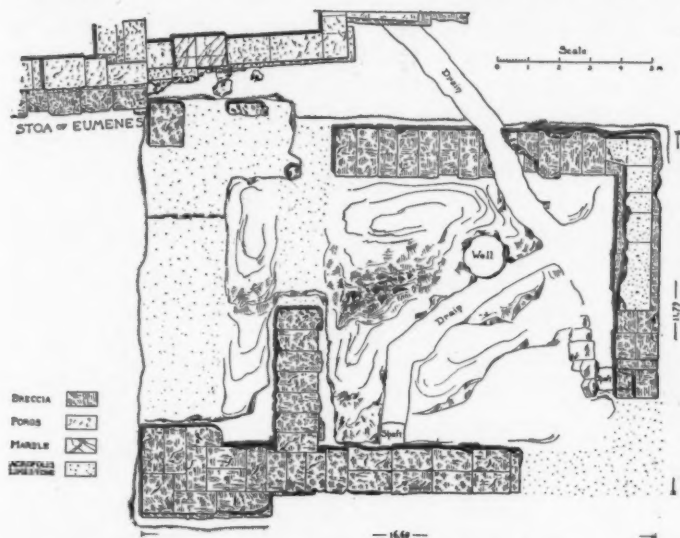


FIGURE 9. — PLAN OF FOUNDATIONS, PRESENT STATE.

hawksbeak moulding from the epistyle antithema of the west portico of the Nicias monument, and another piece which crowned the horizontal geison of the west façade. The fragments of pottery were non-committal, except that the few which were in the earth used as filling when the foundations were laid gave a date at any rate no earlier than the fifth century B.C.

The restoration of the plan of the building is shown in Figure 11, in combination with the east end of the stoa of Eumenes. The only uncertain elements are the thickness of the cella walls and the size of the doorway. The position of the foundations of the cross wall is such as to indicate that the inner face of the

wall was aligned with the end of epistyle *G* (Fig. 1); and if the wall is centred on its foundation, its thickness will be as shown in Figure 1, 0.836 m., slightly greater than that of the parastades.

The history of the monument of Nicias was apparently as follows: Nicias, the Athenian general, the son of Niceratus, and his brothers, Eucrates and Diognetus, dedicated before 415 B.C., as the results of their choragic victories, a series of tripods near the temple of Dionysus Eleuthereus, as we are told by their contemporary Plato.<sup>1</sup> These are the tripods mentioned by Plutarch,<sup>2</sup> who explains their number by the fact that Nicias won many victories. Plutarch adds, however, what Plato does not mention, that lying below (or near or beyond) this row of tripods<sup>3</sup> was a choragic *νεώς*, also dedicated by Nicias.<sup>4</sup> The silence of Plato, the contemporary of Nicias the son of Niceratus, seems significant, and such a monument, if erected by the elder Nicias before 415 B.C., would stand isolated, preceding by a century all others of its type.<sup>5</sup>

<sup>1</sup> Plato, *Gorgias*, 472 A:

Νικίας ὁ Νικηράτου καὶ οἱ ἀδελφοὶ μετ' αὐτοῦ, ὧν οἱ τρίποδες οἱ ἐφεξῆς ἐστῶτες εἰσιν ἐν τῷ Διονυσίῳ.

<sup>2</sup> Plutarch, *Nicias*, 3:

εἰστήκει δὲ καὶ τῶν ἀναθημάτων αὐτοῦ καθ' ἡμᾶς τὸ τε Παλλάδιον ἐν ἀκροπόλει, τὴν χρύσεωσιν ἀποβεβληκός, καὶ ὁ τοῖς χορηγικοῖς τρίποσιν ὑποκείμενος ἐν Διονύσου νεώς· ἐνίκησε γὰρ πολλὰς χορηγίας, ἐλείφθη δ' οὐδέποτε.

<sup>3</sup> ὑποκείμενος could hardly in this case mean lying directly below the tripods in the sense that they were upon its roof, as in the old interpretations; Stuart and Revett, I, p. 30; cf. Dörpfeld, *Griech. Theater*, p. 22. Reisch (*Griech. Weihgeschenke*, p. 100) prefers to translate it "designed for" the tripods, which seems rather forced.

<sup>4</sup> Against the identification of this νεώς with the second cult temple of Dionysus Eleuthereus (Reisch, *Griech. Weihgeschenke*, p. 100; retracted by him, *Eranos Vindobonensis*, 1893, p. 2; but supported by Dörpfeld, *Griech. Theater*, 1896, p. 22) the objections of Furtwängler (*Sitzungsab. d. k. b. Akad. München*, 1901, p. 414) still hold good. (1) Just as the Παλλάδιον of Nicias was one of many on the Acropolis, so the νεώς of Nicias was one of many in the precinct of Dionysus, and that it was a choragic monument is shown by Plutarch's ἐνίκησε γὰρ κτλ. (2) If Plutarch had intended to refer to the temple of Dionysus, he would have said ὁ νεώς τοῦ Διονύσου and not ὁ ἐν Διονύσου νεώς. (3) The cult temple seems too important to be the dedication of a private individual at this early period.

<sup>5</sup> It would have been erected at a time when the accepted form of choragic monument was the low-stepped base, on which was set the tripod (Reisch,

It seems easier to believe that it was the younger Nicias, the son of Nicodemus, who erected the choragic *νεῶς* near the tripods as the result of his victory of 320/19 B.C., and that Plutarch, seeing the tripods of Nicias I and the monument of

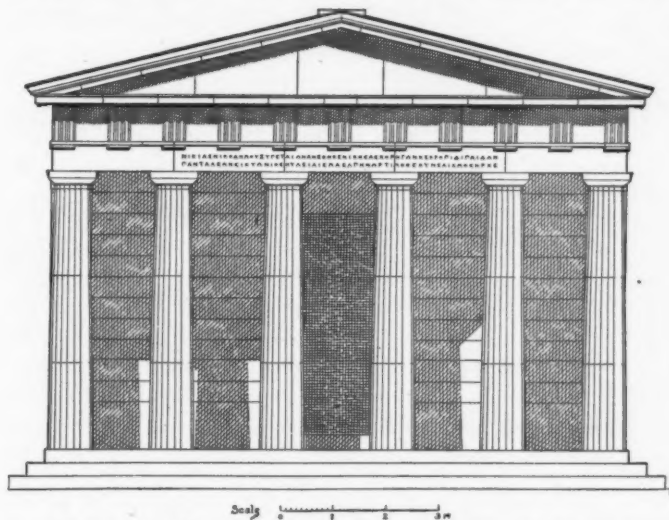


FIGURE 10.—MONUMENT OF NICIAS; WEST FAÇADE, RESTORED.

Nicias II side by side, assumed that all were the offerings of one man, probably without stopping to read inscriptions.<sup>1</sup>

At any rate, ἐν Διονύσῳ<sup>2</sup> lie the foundations of the monument of the younger Nicias, erected immediately after 320/19 B.C.,<sup>3</sup> with its back to the theatre and facing probably on an *Griech. Weihgeschenke*, p. 68, Figs. 1-2, pp. 87-88). It is noticeable that the choragic dedication of Aristocrates, mentioned in the same sentence with the tripods of Nicias (*Gorgias*, 472 A) was of similar character, but with a round podium, such as was usual in monuments in the Pythium. This podium has been found (*I.G.* I, 422; cf. Reisch, *l.c.* pp. 81-83).

<sup>1</sup> Plato, it will be remembered, mentions also the brothers of the general Nicias as dedicators of the tripods, and these surely bore inscriptions to that effect.

<sup>2</sup> Actually backed against the wall of the Dionysium.

<sup>3</sup> It is the opinion of Mr. Versakes, that the monument must be dated a century earlier, because (1) its technique is better and earlier than certain late stones in the Asclepieum (which he dates too early); (2) Hymettus marble,

open area bounded on the north by an old polygonal wall dating probably from the time of Pisistratus.<sup>1</sup> At the back of the monument seems to have been a breccia terrace wall (*B-B*, two stones only are now visible), probably of the date of the theatre and earlier than the monument. This wall *B-B* seems to have abutted on the old wall *A-A* on the north, and these may be the supporting walls of a winding ascent which met the upper road passing through the diazoma of the theatre.

To replace the old polygonal terrace wall Eumenes II (197-159 B.C.) built west of the theatre a great stoa, 163 m. long. The Nicias monument determined its position; the outer foundation line of the east end wall of the open portico is only 2 cm. from the foundation of the monument, and enclosing the north-west corner of the monument are the walls of the annex that contained the staircase leading to the second story of the stoa. The use of a solid wall where the stoa is obstructed by the Nicias monument is paralleled by the stoa behind the theatre<sup>2</sup> and by the stoa of Asclepius. Eumenes built on a higher level than the monument of Nicias; but steps of Hymettus marble, the lowest of which is still in place (Fig. 9), gave direct access from the pronaos of the monument to the stair-hall of the stoa.<sup>3</sup>

proper for the fourth century and used by Lysicrates and Thrasyllus, does not appear here (the evidence is not forthcoming); (3) the profile of the capital is earlier than that of the late capital in the Asclepieum, which Versakes believes, however, to be an exact copy of an original of the beginning of the fourth century; (4) Plutarch ascribes a choragic monument in this position to the elder Nicias (which I believe to be a mistake on Plutarch's part). This form of choragic monument would be unique if of the last quarter of the fifth century, as I have noted above (p. 478, note 5); and it suits the increase in ostentation and display of private wealth by the choregi after the impulse given by the completion of the theatre by Lycurgus about 340 B.C. As a development of his theory, Versakes believes that the inscription on the epistyle must be interpreted as a later addition, on the analogy of *I.G. III, 68 b* (p. 482); and *Nikias Nikodēmon Eureraōn* is made a descendant of *Nikias Nukhōdrou Kudaaridēs*, on the analogy of Thrasyllus and Thrasycles (a manifest impossibility; cf. Kirchner, *Prosopographia Attica*, 10808 and 10816).

<sup>1</sup> Shown on Figure 11, *A-A*. Other stones of this wall, not quite in their original places, have been re-used in foundations in the stair-hall of the stoa of Eumenes.

<sup>2</sup> Dörpfeld, *Griech. Theater*, pl. II.

<sup>3</sup> These five steps led down to a level 1.275 m. below the stylobate of the stoa of Eumenes; this lower level was probably that of the stylobate of the monument of Nicias. The top of the course of Acropolis rock, now the uppermost

East of the stair-hall the polygonal terrace wall was replaced by one of ashlar (*C*), parallel to the Nicias monument and protecting its north flank; this was carried eastward as far as wall

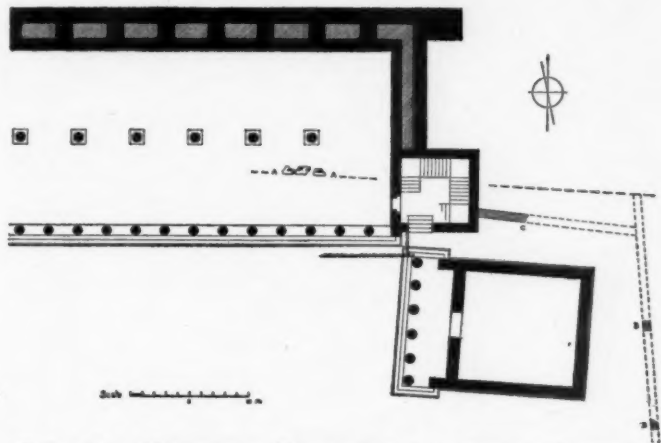


FIGURE 11.—MONUMENT OF NICIAS AND STOA OF EUMENES, RESTORED.

*B-B.* The former approach above walls *B-B* and *A-A* was now disused; the stoa of Eumenes made it impassable.

We have no direct evidence for the date of the destruction of the Nicias monument. Dörpfeld dated it 161 A.D., because he regarded the foundation partly on the site of the odeum of Herodes Atticus as the foundation of the monument of Nicias; but the construction (or reconstruction) of the Beulé Gate, an immediate result of the destruction of the monument, seems of too careless and ignorant workmanship to be contempo-

part of the foundation of Nicias, is 0.955 m. lower still; it did not support the marble steps directly, but probably a *poros* euthynteria, for it shows pry-holes, but no dowels. Supposing the three steps of the monument of Nicias to be 0.75 m. high, which would suit the proportions, a euthynteria 0.205 m. high would just bring the stylobate up to the level of the bottom of the steps from the stoa of Eumenes. A filling of earth and a pavement probably now connected the bottom of the flight of steps and the stylobate of Nicias. How the change of ground level here was managed is unknown; the suggestion of a slight retaining wall (Fig. 11) is derived from an analogous case at the south end of the stoa of Attalus (Πρακτικά, 1899, pl. II; Judeich, *Topographie von Athen*, p. 316).



rary with the odeum of Herodes Atticus, the Telesterion, and the greater propylaea at Eleusis, etc. And we may, perhaps, arrive at a more satisfactory conclusion from the probability that the close connection of the monument with the stoa of Eumenes may have led to a common fate. A trench for a late drain, cut in bed rock, destroyed part of the foundations of both the stair-hall and the monument. Columns of the stoa were found built into reinforcements of the city wall farther south, repairs supposed to be of late Roman or even mediaeval times.<sup>1</sup> But other portions of the stoa of Eumenes — namely, the geisa of the second story — were used by Phaedrus for his reconstruction of the stage of the theatre of Dionysus.<sup>2</sup> The date of Phaedrus, son of Zoilus, is difficult to determine; from the inscription cut on one of these very geisa (*I.G.* III, 239), he is usually assumed to have been archon, and is dated at about the end of the third or beginning of the fourth century A.D.;<sup>3</sup> he is evidently the same as Phaedrus, the son of Zoilus, of Paeania, named on a sun-dial in the British Museum.<sup>4</sup> The new geisa which Phaedrus caused to be made for the front of the stage seem contemporary in workmanship with those which were made to piece out some earlier geisa which, upside down, decorated

<sup>1</sup> Dörpfeld, *Ath. Mitt.* XVII, 1892, pp. 450 f.

<sup>2</sup> These geisa are assigned by Versakes (*Jb. Arch.* I. XXIV, 1909, pp. 204 f.) to a hypothetical proscenium of Nero, of which they form the only evidence. They are of a peculiar dull gray, fine-grained marble which is used for interior columns and for those in the second story of the façade of the stoa of Eumenes. In form the geisa are almost exactly like the peculiar geisa of the stoa of Attalus (Adler, *Stoa des Attalus*, pl. 6; Bohn, *Stoa Königs Attalos*, II, pl. 2) — low geisa suited to the smaller order of the second story, but with a disproportionately great overhang to crown the whole height of the façade; the mutules without guttae, and the clamps, dowels, and workmanship resemble those of the stoa of Attalus. The spacing of the mutules averages 0.613 m., which is exactly a quarter of the intercolumniations of the stoa of Eumenes (2.451 m.), and has nothing in common with any triglyph spacing of the theatre. These geisa are unlike those of the stoa of Attalus, in lacking a gutter behind the sima, in having a very slight slope on top (3 in 70), and in being cut behind for an earth pavement, as if they formed the edge of a terrace. This terrace, however, was not the roof of a Neronian proscenium, but the roof of the stoa of Eumenes.

<sup>3</sup> A. Müller, *Bühnenalterthümer*, p. 88, note 2. Von Schöffer, without giving evidence, places him between 222/3 and 235/6 A.D. (Pauly-Wissowa, II, 597), an impossibly early date.

<sup>4</sup> *I.G.* III, 437; *Museum Marbles*, IX, pl. 43, Fig. 1, pp. 193-194.

three great buttresses<sup>1</sup> in the western part of the stoa of Eumenes, presumably erected after the colonnades and roof had been removed.

Even if we cannot establish the exact date of the destruction of the monument of Nicias, the relative chronology of a group of late constructions which are practically contemporary will help to determine it: (1) the destruction of the stoa of Eumenes and the monument of Nicias, (2) the reconstruction of the Beulé Gate, (3) the reconstruction of the stage of the theatre by Phaedrus, and (4) the erection of the buttresses against the back wall (then rebuilt) of the stoa of Eumenes.

W. B. DINSMOOR.

ATHENS.

P.S. — The sima which I tentatively assigned to the Nicias monument must now be discarded. Another fragment of the same type, now in the theatre of Dionysus, has a joint at the left end and a portion of a lion-head spout, and is therefore a flank sima; the edge of the lion head is 0.205 m. from the joint. According to the scale, the width of the lion head must have been about 16 cm., and this would make the length of the block about 57 cm., too great to fit the mutule spacing (0.523 m.) of the Nicias monument. The fragment first known, 39 cm. long, without a trace of either joint or lion head, seems to be a raking sima from a gable.

In a recent article entitled 'Zu den Bauwerken Athens' (*Ath. Mitt.* XXXVI, 1911, pp. 39-72), Professor Dörpfeld discusses, among other buildings, the monument of Nicias. He notes that the capital identified by Versakes had previously been assigned by Penrose to the upper tier of columns inside the Parthenon (*Ath. Mitt.* 1911, p. 62). It must be admitted that its present position, east of the Parthenon, would be more natural for a portion of the Parthenon itself than for a fragment of the monument of Nicias. But this capital has a lewis hole for lifting, unlike any capitals of the Parthenon, a mode which did not appear, except in unusual cases, until the fourth century. Again, it has twenty channels, and it is unlikely that, when the columns of the lower tier inside the Parthenon,

<sup>1</sup> Only two now remain.

to be more in scale with the external order, had only sixteen channels (Penrose, *Athenian Architecture*<sup>2</sup>, p. 9), the still smaller columns of the upper tier should have had twenty. I see no reason, therefore, to reject the original identification by Versakes.

When Professor Dörpfeld wrote, I believed that, on account of the arrangement of the tympanum antithemata, the central tympanum block identified by Versakes did not belong to the monument (*Ath. Mitt.* 1911, p. 64); subsequent investigation caused me to decide otherwise, as I have said above.

Dörpfeld accepts my identification of the foundations and admits that, because of their location beside the precinct of Dionysus, Furtwängler's suggestion of a confusion of the earlier with the later Nicias by Plutarch is somewhat more plausible. He prefers, however, his original theory, that the elder Nicias actually built a temple, the second temple of Dionysus (*Ath. Mitt.* 1911, pp. 66-67).

Finally, Dörpfeld now believes, as I do also, that the workmanship of the Beulé Gate is too poor for the second century A.D., and must date from late Roman or even Byzantine times.

W. B. D.

ATHENS,  
November, 1910.

1910  
January—June

## ARCHAEOLOGICAL DISCUSSIONS<sup>1</sup>

### SUMMARIES OF ORIGINAL ARTICLES CHIEFLY IN CURRENT PUBLICATIONS

WILLIAM N. BATES, *Editor*

220, St. Mark's Square, Philadelphia, Pa.

---

#### GENERAL AND MISCELLANEOUS

**The Thracian Element in the Rumanians.**—E. FISCHER, in *Z. Ethn.* XLII, 1910, pp. 311-315, in a résumé of the inaugural dissertation of Perikles Papahagi (Leipzig, 1908), maintains that Rumanian, Albanian, Modern Greek, and Bulgarian folklores, ways of thinking and speaking, including proverbs, riddles, songs and tales, superstitions, household customs, etc., resemble one another because all have a common "Thracian" basis. He compares herewith what we know of the ancient Thraco-Illyrian stock.

**The Pumpelly Expedition to Central Asia.**—At the June (1909) meeting of the Berlin Archaeological Society, Hubert Schmidt spoke on the geologic-archaeological expedition to Turkestan in 1904, of which he was a member, and on the publication of the results by the Carnegie Institute (Washington, 1908), and expressed the opinion that R. Pumpelly's chronological estimates are much exaggerated. Four periods of habitation were studied by deep excavations on three sites: I. Stone, set by Pumpelly at 8000 B.C.; II. Bronze; III. Bronze, about 2000 B.C.; IV. Iron, 1000-500 B.C. Great oscillations of climate, producing periods of flood, occurred both before and after the two bronze periods, separating them from the stone and iron periods. The cultivation of grain goes back to the very earliest time, when only wild animals were known, and the horse, ox, pig, and sheep appear domesticated before the end of the first period. The camel and goat come in at the beginning of period II. Central Asia seems to have been the original home of domestic animals as well as of human kind. (*Arch. Anz.* 1910, cols. 63-66.)

<sup>1</sup> The departments of Archaeological News and Discussions and of Bibliography of Archaeological Books are conducted by Professor BATES, Editor-in-charge, assisted by Professor C. N. BROWN, Miss MARY H. BUCKINGHAM, Mr. L. D. CASKEY, Miss EDITH H. HALL, Mr. HAROLD R. HASTINGS, Professor ELMER T. MERRILL, Professor FRANK G. MOORE, Professor CHARLES R. MOREY, Dr. JAMES M. PATON, Professor LEWIS B. PATON, Professor A. S. PEASE, Professor S. B. PLATNER, Dr. N. P. VLACHOS, and the Editors, especially Professor MARQUAND.

No attempt is made to include in this number of the JOURNAL material published after June 30, 1910.

For an explanation of the abbreviations, see pp. 140, 141.

**The Inscription from the Stūpa of Kanishka.**—In *C. R. Acad. Insc.* 1909, pp. 786-790, E. SENART discusses the inscription on the bronze urn found by Spooner in the stūpa of Kanishka in the Peshawar valley (see *A.J.A.* XIV, pp. 81-83). He doubts the correctness of interpreting *Agisala* as a proper name, Agisalaos, and suggests that it is a dialectic form for *agnisālā*, "sanctuary of the fire."

**Drawings by Melchior Lorich.**—Two drawings now in Copenhagen, which were made in Constantinople in 1559 and 1561 by Melchior Lorich, a native of Flensburg, then on the staff of the Imperial Ambassador to the Porte, are published by H. HARBECK in *Jb. Arch.* I. XXV, 1910, pp. 28-32 (3 figs.) together with a photograph of the original of one of them. This is a relief on the west side of the base of the obelisk set up in the Hippodrome by Theodosius in 390 A.D. and still there. The original of the other, a relief commemorative of victory, on the base of a round column, is not known. Both drawings have the figures unduly lengthened, and in the first one some details seem to be supplied from the imagination.

**The Façades of the Nabataean Rock-tombs.**—With the appearance of new material on the Nabataean rock-tombs, especially Jausen and Savignac's studies of the façades at Hegra (*Mission archéologique en Arabie*, Paris, 1909), in which the dates of particular tombs are more fully given than elsewhere, the question of the origin of various architectural elements and the chronological sequence of styles, both at Petra and at Hegra, is brought nearer to a solution. Apparently the earliest, orientalizing form, copied from the Arab house with pylon-like front and "stepped" battlements or peaks like altar-horns, was declining before the beginning of the Christian era, and a new Hellenistic type was introduced at about that time, which in turn gave place to a more Romanized form in the second century. It seems probable, though not certain, that the Greek elements, instead of coming in gradually, first appeared in a fully developed combination that had its origin elsewhere, and then fell away by degrees, as not congenial to the native taste. The ultimate origin of some non-Greek elements, such as the hollowed cornice, seems to be Egyptian. Both Alexandria and Northern Syria have similar tomb-types, but the nearest analogies are found around Jerusalem. (O. PUCHSTEIN, *Arch. Anz.* 1910, cols. 3-46; table; 16 figs.)

**The Sabaeen God Ilmukah.**—In *Mitt. Vorderas. Ges.* XIV, 1909, pp. 305-374, D. NIELSEN discusses a divinity whose name appears more frequently than any other in the Sabaeen inscriptions. After a review of previous theories in regard to the pronunciation of the name of this god, he reaches the conclusion that the correct pronunciation is *Ilmukah*, and that it is made up of the two words *il* and *mukah* and means "the god of decision," that is, the god who decides matters by means of his oracle. This is not a true proper name but only an appellative, and the divinity who was described by it was really the moon-god, who occupied a position of supreme importance in ancient Arabia as an oracle-giver in the same manner as the moon-god Sin in Babylonia.

**The Swastika as the Origin of the Alphabet.**—In *Memnon*, III, 1909, pp. 175-200, W. SCHULTZ examines the traditions which connect the origin of writing with a primitive man who was of divine origin, and shows that the swastika in its various forms is meant to be a symbol of this personage.

These traditions, he holds, contain a reminiscence of the fact that the letters of the alphabet are derived from the swastika sign, and are primarily magical characters that were invented in the service of religion. He then endeavors by a comparison of old Greek and Semitic forms to show that the letters of the alphabet are developments of the swastika sign.

**The Meaning of the Chinese Name Fu-lin.**—In *J.A.O.S.* XXX, 1909, pp. 1-31, F. HIRTH seeks to prove that the country known as Fu-lin in the Chinese classics is the Roman Empire; but that the conceptions of this power are all derived from the Asiatic provinces, with which alone the Chinese had commercial dealings.

**The Meaning of the Chinese Name Hiung-nu.**—In *J.A.O.S.* XXX, 1909, pp. 32-45, F. HIRTH opposes the view of T. W. Kingsmill in *J.R.A.S.* XXXIV, pp. 137-141, that Hiung-nu and the Huns were different nations, and seeks to prove the identity of the two peoples.

**Early Chinese Notices of East African Territories.**—In *J.A.O.S.* XXX, 1909, pp. 46-57, F. HIRTH shows that the Chinese texts contain mention of Alexandria, Barbary, Socotra, Abyssinia, and possibly of Zanzibar. On the east coast of Africa Chinese remains have been discovered in considerable quantities.

**Ancient Chinese Medals.**—In *A. J. Num.* XLIV, 1910, pp. 1-13 (fig.), M. J. SILVESTRE prints an English translation of an important article on ancient Chinese medals, recently published in a report of the French mint. The article explains the character and meaning of the devices on the medals.

**Classification of Libraries in Museums of Art.**—In the *Proceedings of the American Association of Museums*, III, 1909, pp. 93-115, WILLIAM H. GOODYEAR discusses the Dewey system of classification, finds it undesirable for the libraries of Museums of Art, and proposes a new classification of books on art, primarily a division by periods.

## EGYPT

**The Temple at Wady Halfa.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 269-279 (3 pls.), J. H. BREASTED attacks the article of P. Scott-Moncrieff in *S. Bibl. Arch.* 1907, pp. 39-46, in which he claims that there is no evidence of an erasure of the name of Queen Hatshepsut and of feminine pronouns and endings referring to her, and the substitution of the name of Thutmose II, in the temple at Wady Halfa. He shows by photographs that Scott-Moncrieff has failed to observe all the evidence, and has copied the inscriptions inaccurately; and exhibits in detail the evidence that the temple was erected originally by Thutmose III and Hatshepsut jointly, and that the name of Thutmose II has been repeatedly inserted in the place of Hatshepsut, and that feminine pronouns and endings referring to her have been changed to the masculine. *Ibid.* pp. 333-338, P. SCOTT-MONCRIEFF replies to Professor Breasted, by saying that the inaccuracy in his article was due to the fact that he was not intending to make a complete scientific report of his investigations.

**The Egyptian Land Kefti.**—In *Or. Lit.* XIII, 1910, cols. 49-54, A. WIEDEMANN discusses the relation of the Egyptian name Kefti to the Biblical Kaphtor, and calls attention to a text in which Kefti-herau or Upper Kefti is mentioned. From this name he holds that the Biblical Kaphtor has been derived. *Ibid.* cols. 108-112, W. M. MÜLLER discusses the identity of Kefti



with the island of Crete; also its relation to Kaphtor. He regards Kefti as the earlier form, and Kaphtor as a later spelling that did not find its way into Egypt until the sixth century.

**Scarabs as Historical Documents.**—In *Ber. Kunsts.* XXXI, 1910, cols. 92-99 (16 figs.), H. SCHÄFER calls attention to the importance of scarabs for Egyptian history. They have preserved the names of several kings not otherwise known, and, in a way, furnish the information elsewhere obtained from coins. Four large scarabs of Amenophis III, now in Berlin, giving incidents in the king's life, the extent of his kingdom, his hunting exploits, etc., are described and in part translated.

**The Semitic Name for Egypt.**—In *Z. Alttest. Wiss.* XXIX, 1909, pp. 268-274, W. CASPARI maintains that the Semitic name for Egypt, which appears in Hebrew as *Misraim*, is not of Egyptian origin, but has been derived by the Semites from some other race which at the time exercised sovereignty over Egypt. This he thinks may have been the Hyksos, whose native name may have been composed of the consonants *mgr*. This name they brought with them into Egypt at the time of their conquest, and from them it spread to the Semites and became their permanent designation of Egypt. This theory would explain why we find the same name in use for a part of Arabia, and also for a region of Cilicia. These were regions which were also occupied by branches of the Hyksos race.

**Carved Slates from Egypt.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 297-310 (7 pls.), F. LEGGE continues his discussion of archaic carved slates begun in previous numbers of that journal (*A.J.A.* XIV, p. 208), with a description of six more of these slates which represent various animals attacking men and attacking one another. He concludes that the figure of the lion which appears on all is the emblem of one of the tribes that invaded Egypt in pre-dynastic times and enslaved the aboriginal inhabitants that it found there. The earliest settlement of this lion tribe was at Mahasna, and the slates give a fairly continuous history of its rise to supremacy over other invading tribes, of its overthrow, and of its reduction to an equality with them in a confederation.

**The Beginnings of Statuary in Egypt.**—In *R. Arch.* XV, 1910, pp. 244-262 (36 figs.), F. W. VON BISSING traces the progress of statuary in Egypt from the primitive archaic terra-cottas and ivories of the times before Menes through the more developed statuettes of the Thinite period to the classic art of the Memphite dynasties.

**An Entrance into the Lower World at Thebes.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 102-114, G. FOUCART discusses the Egyptian representations of that moment of the second life when the ghost of the deceased, about to cross the boundary of the world of the living, finds itself at the foot of the Mountain of the West. The divine cow, or the edifice in pyramidal form, or better still, the cow and the edifice combined, form the principal subject of the scene. These represent a group of ceremonies and buildings which had a real existence. Their site was at the bottom of the amphitheatre of Deir el-Bahri, and the subterranean chambers and temple pyramid found by Naville on this spot are the remains of the buildings so often figured by the Egyptians in their funerary monuments.

**Ethnological Relations of the Egyptians.**—In *Z. Ethn.* XLII, 1910, pp. 318-320, G. FARRISCH discusses the racial relations of various classes



of the ancient Egyptian inhabitants on the basis of craniological differences.

**An Early Egyptian Contract Papyrus.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 5-10 (pl.), F. L. GRIFFITH publishes in hieroglyphic text and translation an early Egyptian contract relating to the sale of a slave, that is preserved in the Vatican library, and exhibits the rare "abnormal hieratic" writing which prevailed during the twenty-fifth and part of the twenty-sixth dynasty.

**Graeco-Egyptian Portraits.**—In *B. Metr. M. V.*, 1910, pp. 67-72 (11 figs.), A. M. L (ΥΤΗΓΟΕ) publishes seven portrait panels of the so-called Fayum type recently acquired by the Metropolitan Museum of New York, calling attention to the technique and date of these monuments and of the plaster masks from mummy cases. The first Hellenized masks and panels make their appearance in the first century A.D., but most of them date from the second century. Some of the masks are portraits, while others represent conventional types. The Metropolitan Museum has thirty-eight of these masks. The panels in their realism and freedom of treatment are far better. They were not, however, always painted from the individual, as a panel in the Cairo museum has on the back memoranda by the painter of the way the features of the person were to be depicted. The painting is usually in encaustic on wooden panels, but sometimes in distemper, and occasionally in both methods. The colors were mixed with melted wax and then applied in a fluid state either directly to the wood or after the surface had been sized. The drapery and background were painted with a brush, but the colors of the flesh and hair were laid on thicker and then worked over with a hard, pointed instrument. The details, such as the eyelashes, were added with a fine brush. Berger's discovery of a *cestrum*, or spoonlike tool, in the Naples museum throws some light on encaustic painting. The portraits were rarely painted on canvas or linen.

**Egyptian Deities in Northwestern Africa.**—In *R. Hist. Rel.* LIX, 1909, pp. 149-159, S. GSELL points out that there is evidence for the worship of Serapis at Carthage, Gigthis, Sabrata, Thaeanae, Thysdrus, Henchir, Debbik, Choud el Batel, Rusicade, Cirta, Theveste, Timgad, Cuicul, Aquae Flavianae, Lambesis, Caesarea, Taksebe, and Malliana. Anubis and Isis were also worshipped at Carthage; and Anubis, Bes, Hermes-Thoth, and Isis at Lambesis. These cults were not popular, but flourished in seaports or where there was a large foreign population.

## BABYLONIA, ASSYRIA, AND PERSIA

**Royal Cylinders of the First Babylonian Dynasty.**—In *R. Arch.* XV, 1910, pp. 107-117 (4 figs.), L. DELAPORTE publishes four early Babylonian cylinders in the Bibliothèque Nationale. One bears the name of King Sumu-la-il. On it two deities, a worshipper and his servant, are represented, all standing. On the second seal are a god and a goddess, standing. The inscription gives the name of Hammurabi. On the third seal, the owner, Ibal-erah, calls himself the "servant of Šamši-Adad." On it three divinities are seen, the middle one being armed with a mace. The fourth seal, with the inscription "Imgur-Sin, magician, son of Sin-idinnam, servant of Sin-māgir," has on it three figures, a warlike goddess, the person-

age with a mace, and a deity holding up his hands. A fifth seal (third in the order of the article), in the Clerq collection, differs from the second only in its inscription: "Danatum, son of Sin-taiar, son of <sup>the</sup> Rim-<sup>the</sup> Sin."

**Tablets of the Second Dynasty of Ur from Nippur.**—In *The Babylonian Expedition of the University of Pennsylvania*, Series A, Vol. III, Pt. 1, *Sumerian Administrative Documents from the Second Dynasty of Ur* (Philadelphia, 1910, published by the Department of Archaeology, University of Pennsylvania, xii, 146 pp.; 82 pls., 4to, \$6), DAVID W. MYHRMAN publishes 171 Sumerian tablets from Nippur, now in the Free Museum of Science and Art of the University of Pennsylvania. They are chiefly contracts written during the second dynasty of Ur. The subject-matter of the tablets, the date formulas of the second dynasty, the names and the order of the months and the proper names are fully discussed. Specimen tablets are transcribed and translated and a sign list given. The writer proposes the following as approximate dates for the kings of the second dynasty: Ur-Engur, 2408-2390 B.C.; Dungi, 2390-2332 B.C.; Bur-Sin, 2332-2323 B.C.; Gimil-Sin, 2323-2316 B.C.; and Ibī-Sin, 2316-2291 B.C.

**The Kingdom of Hana.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 292-294, C. H. W. JOHNS discusses a newly published tablet from the kingdom of Hana which mentions a person called Pagirum who is the only witness to a previously published marriage contract from Hana. The marriage contract is dated in the reign of a king Hammurapih. The year mentioned is not found in the lists of the years of Hammurabi's reign, and it is uncertain whether Hammurapih is distinct from Hammurabi; or whether he is identical, and a different system of naming the years prevailed in the kingdom of Hana from that in use in Babylon.

**The Hittites in Babylonia.**—In *R. Sém.* XVIII, 1910, pp. 87-96, M. JASTROW, JR., reports some new data which confirm the discovery by King of a Hittite conquest of Babylonia in the time of Samsu-ditana. The divination texts, which are full of historical references, contain further evidence of a conflict between the Babylonians and Hittites. In two of these texts it is recorded that an eclipse is a sign that the king of the Hittites will advance and seize the throne. These statements are based upon observation of an actual Hittite conquest, and show that the interval between the first dynasty of Babylon and the reign of the first Kassite king is filled by a reign of Hittite chiefs in Babylonia. The historical references in these omen-tablets belong to the period between 2300 and 1760 B.C. Hittite influence is also confirmed by the presence of Hittite names among the first kings of Assyria in the period which corresponds to their incursion into Babylonia.

**Babylonian History.**—In *R. Arch.* XV, 1910, pp. 145-160, is a sketch of 'Quinze siècles d'histoire babylonienne (3000-1500 av. J.-C.),' by G. MASPERO, reprinted from *Le Temps*, January 4, 1910.

**The History of Seal Cylinders.**—In *Ber. Kunsts.* XXXI, 1910, cols. 200-204 (8 figs.), L. MESSERSCHMIDT sketches the history of Babylonian seal cylinders, first as seals and later as amulets, and publishes eight cylinders in the Berlin museum dating from the Persian period.

**Old Babylonian Legal Documents.**—In *Sitzb. d. Kais. Akad. d. Wissenschaften in Wien, Phil.-hist. Klasse*, CLX, 1909, Abh. 5, pp. 1-92, MOSES SCHÖRR publishes in transliteration and translation, with commentary, word

list, and index, forty-one of the 119 legal texts first published by Ranke in *The Babylonian Expedition of the University of Pennsylvania, Series A: Cuneiform Texts*, Vol. VI, Part I. The documents are in Ranke's numbering, 1, 2, 6, 7, 8, 10, 13, 14, 15, 23, 26, 27, 30, 34, 39, 42, 45, 47, 49, 50, 51, 53, 58, 62, 65, 74, 75, 76, 77, 78, 83, 86, 87, 88, 89, 94, 97, 98, 103, 111, 116, all from the time of the first Babylonian dynasty.

**A Relief of Goudea.**—In *Mon. Piot*, XVI, 1909, pp. 5-24 (2 pls.; 5 figs.), L. HEUZEY points out that in 1905 a stairway of nine steps was uncovered by Cros at Tello, and about ten metres in front of it remains of a rectangular building. On the southwest side of this building, facing the stairway, were remains of three bases of sun-dried brick. The middle one supported a large relief of which more than a hundred fragments were found near by (see *A.J.A.* XIV, p. 365). The large fragment in the Louvre representing a procession may well have belonged to this stele. An attempt is made to reconstruct some of the scenes in spite of their fragmentary condition. Goudea is known to have erected seven of these stelae (Cylinder A of Goudea), and they were probably destroyed by the Elamites in the time of Koudour-mapoug.

**Another Fragment of the Etana Myth.**—In *J.A.O.S.* XXX, 1909, pp. 101-131 (4 pls.), M. JASTROW, JR., publishes a tablet from Ashurbanipal's library in the possession of the Berkshire Athenaeum of Pittsfield, Mass. It contains a part of the Etana myth which supplements the fragments of this myth previously published by Harper.

**A Hymn to Bél.**—In *J.A.O.S.* XXX, 1909, pp. 61-71, F. A. VANDERBURGH publishes in transcription and translation, with a commentary, the hymn to Bél published in *Cuneiform Texts*, XV, pls. 12 and 13.

**A Hymn to Tammuz.**—In *J.A.O.S.* XXX, 1909, pp. 94-100, J. D. PRINCE publishes in transliteration and translation, with a commentary, the hymn to Tammuz contained in *Cuneiform Texts*, tablet 15821, pl. 18.

**The Seventh Tablet of Creation.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 115-123; 159-167, S. LANGDON reconstructs, with the aid of Assyrian commentaries, part of the Sumerian text of the seventh tablet of creation.

**The Babylonian Parallel to the Story of Job.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 18-24 (2 pls.), R. C. THOMPSON publishes a part of the third tablet of the series known as *Ludlul bél nimêki*, which was published by Professor Jastrow in *J. Bibl. Lit.* XXV, pp. 135 ff., under the title, 'A Babylonian Parallel to the Story of Job.' Hitherto the third tablet has been known only from a commentary.

**The Accadian Calendar.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 11-17; 55-63 (pl.), EMELINE PLUNKET discusses the problem whether the beginning of the first month Nisan in the Babylonian calendar was determined zodiacally or equinoctially, and concludes that the old Babylonian practice, which was preserved by the Assyrians in the recorded astronomical observations of the seventh century B.C., was to reckon the beginning of the year zodiacally; that is, the first of Nisan was counted from the first visibility of the new moon which coincided with or most closely followed the arrival of the sun in the constellation Aries; and that the determination of the new year was accomplished by observation of the group of stars which are now known as the Pleiades.

**The Old Babylonian Method of Dating.**—In *Or. Lit.* XIII, 1910, cola.

193-195, F. E. PEISER publishes a new document belonging to the twenty-fourth year of Samsuiluna, which throws light upon the method of naming the years followed by the ancient Babylonians.

**The System of Intercalation in the Babylonian Calendar.**—In *Or. Lit.* XIII, 1910, cols. 66-67, A. UNGNAD shows that there was no regular system in ancient Babylonia for inserting extra months in order to make the lunar year correspond with the solar year. These months were apparently inserted arbitrarily whenever it was felt that the lunar year was falling too far behind the solar.

**Babylonian Weights.**—In *Z. Morgenl. Ges.* LXIII, 1909, pp. 701-729, K. REGLING and C. F. LEHMANN-HAUPT discuss the article of F. H. Weissbach in *Z. Morgenl. Ges.* LXI, 1907, pp. 379 ff., and maintain, in opposition to him, that the existence of two distinct systems of weights, the so-called ordinary and the royal, can be proved for Babylonia and Assyria, that there was a distinction between the gold and silver mina, that the former was divided into 50 instead of 60 shekels, and that there was a fixed ratio of  $13\frac{1}{2}$  to 1 between gold and silver.

**The Black Obelisk and the Moabite Stone.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 152-154, A. FOTHERINGHAM discusses the mention of Jehu as "the son of Omri" in the Black Obelisk of Shalmaneser II, and the mention of "the sons of Omri" in the Moabite Stone, and finds their explanation in the assumption by Jehu of the official title "son of Omri." He holds that the Moabite Stone is to be dated in the middle of Jehu's reign, which will allow for forty years, that is, a generation, between Omri's later years and the erection of this monument.

**The Genealogy of the Kings of Assyria from 1400-722 B.C.**—In *Or. Lit.* XII, 1909, cols. 527-531, P. SCHNABEL attempts, on the basis of the newly discovered inscriptions in the city of Asshur, to reconstruct the genealogical relationship of all the kings of Assyria whose names are known to us.

**The Annals of King Tukulti Ninip II.**—In *C. R. Acad. Insc.* 1909, pp. 807-820, FATHER SCHEIL describes a large tablet brought to Moussoul a few years ago. It contains in 147 lines of fine writing the annals of the Assyrian king Tukulti Ninip II (889-884 B.C.). Facts, dates, names, etc., are carefully recorded. The first five campaigns of the king are briefly reviewed, and the sixth described in detail. The text of this is given with a translation.

**A New Prism of Sennacherib.**—In *Or. Lit.* XIII, 1910, cols. 145-150, H. WINCKLER describes a new prism of Sennacherib recently published in the twenty-sixth volume of *Cuneiform Texts from Babylonian Tablets in the British Museum*. This new document supplements the previously known sources in regard to Sennacherib's reign by further information concerning the expeditions against Hilaku Kue and Til-garimmu in the years 698-695 B.C.

**Azariah of Judah and Tiglath Pileser III.**—In *J. Bibl. Lit.*, XXVIII, 1909, pp. 182-199, H. M. HAYDN seeks to show that the current view that Azriyau, king of Yaudi, in the inscriptions of Tiglath Pileser III is not to be identified with Azariah of Judah, is incorrect, and that the older identification of these names by Schrader is still to be maintained.

**The Standing Army of the Assyrian Kings.**—In *Z. Assyriol.* XXIV, 1910, pp. 97-149, W. MANITIUS opposes the current view that the Assyrian

army was made up chiefly of mercenaries, and shows that in the Old Empire it was composed of native Assyrians, who were drafted for the campaigns, but who did not form a standing army. In later times the growth of the empire made a standing army necessary, but even this was not composed of foreigners, but of native Assyrians and of the people of the provinces that had been incorporated into the Assyrian Empire. This force consisted of chariotry, horsemen, infantry, shield-bearers, lancers, archers, slingers, and artisans. The functions of these various troops as described in the inscriptions are investigated in detail.

**An Early Mention of Cotton.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 339-343, L. W. KING calls attention to the fact that in the historical cylinder of Sennacherib, which has recently been acquired by the British Museum, the king reports that in the great park which he laid out in Nineveh "the trees that bore wool they sheared, and they shredded it for garments." This tree that bore wool must have been the tree-cotton which still grows in Egypt and India.

**Literature on Assyriology.**—In *J. Asiat.* XVI, 1909, pp. 415-482, C. FOSSEY gives a detailed account of all the publications in the field of Assyriology during the year 1907.

**A Persian Vaulting System.**—A study of the vaulting system of the deserted palace of Ukheidar is made by Miss G. L. BELL in *J.H.S.* XXX, 1910 (pp. 69-81; plan; 12 figs.), as a contribution to the material for a final study of the relation of Hellenistic architecture to that of the East. This palace, which stands on the eastern edge of the Syrian desert, and was perhaps built by Sassanid architects as a retreat for the Ommayad califs of Damascus (660-750 A.D.), is almost perfectly preserved, and has three stories standing on the side which adjoins the fortified wall of the enclosing court. It is built of stone with some brick vaults and others of stone slabs cut to the size and shape of bricks. The masonry was originally covered with stucco, often with elaborate plastic decoration in geometric designs. The roofs have both barrel vaults, made without centering, and groined vaults. Interesting features are the tunnels reserved in the masses of intervening masonry for lightening and perhaps for cooling the structure, and one small dome set on slats across the corners of a rectangular chamber. The squinch arch, a sort of arched niche over a square corner, occurs, but the dome set on pendentives, which seems to have been an invention of the coast cities of Asia Minor, does not appear.

## SYRIA AND PALESTINE

**Recently Discovered Semitic Inscriptions.**—In *Eph. Sem. Ep.* III, 1909, pp. 37-84 (pl.; 4 figs.), M. LIDZBARSKI describes and discusses all the Hebrew, Phoenician, Punic, Aramaic and Nabataean inscriptions that have been published in the course of the past year. He also reports the bibliography on the subject of the Aramaic papyri discovered in Egypt. There is an elaborate discussion of the so-called calendar inscription lately discovered at Gezer, and a plate containing a photograph of this inscription.

**The Gezer Tablet.**—In *Pal. Ex. Fund.* XLII, 1910, pp. 32-38, E. J. PILCHER maintains that the script of the tablet recently discovered at Gezer cannot be assigned to the eighth or ninth century B.C., as has been done by

Cook and Lidzbarski, but is not earlier than the sixth century B.C. Incidentally he suggests that the Siloam inscription is not earlier than the Greek period.

**Abraham in Archaeology.** — In *J. Bibl. Lit.* XXVIII, 1909, pp. 152-168, G. A. BARTON sums up the results of the discussions of the last few years concerning the bearing of the discoveries of archaeology upon the historical character of Abraham. The name Abraham has been found as a personal name in Babylonia in the time of the Hammurabi dynasty. The evidence that Babylonia long dominated Palestine is constantly on the increase. Certain statements of the fourteenth chapter of Genesis have been rendered more probable by some of the recently discovered facts. But archaeology is still far from having established the early composition and historical character of Genesis xiv. The best theory in regard to that chapter is still that it was composed by a late Midrashic writer who had access to some genuine Babylonian data, partly late and partly early. The early presence of the Hittites in Palestine has been established, and it may be that the priestly document is correct in placing them at Hebron. The chronology of Genesis xiv has been helped by the proof that the second dynasty of Babylon was contemporary with the first. The Canaanite migration and the lives of the patriarchs according to Genesis would thus be contemporary with the period of Kassite rule in Babylonia. This is the age to which all the Biblical references except Genesis xiv point; but Genesis xiv is inconsistent with this, if Amraphel of that chapter be identified with Hammurabi. The same subject is discussed by A. UNGNAD in *S. S. Times*, LII, 1910, p. 47.

**Cushan-Rishathaim.** — In *Exp. Times*, XXI, 1910, p. 192, C. J. BALL suggests that Cushan-Rishathaim in Judges iii, 7-11, is identical with the Kassite name Cash-sha-ri-shat, and that Cush designates the Kassite dynasty in Babylonia. In this name we may have preserved the proof of a Kassite invasion of Palestine.

**The Number 42 in the Old Testament.** — In *Or. Lit.* XIII, 1910, cols. 150-152, J. HERRMANN shows that the 42 judges of the dead played a large part in the ancient Egyptian religion, and calls attention to the fact that in at least four passages in the Old Testament the number 42 is connected with the dead. In this fact he sees a survival of Egyptian thought in Hebrew tradition.

**The Image of Yahu in the Temple of Solomon.** — In *Memnon*, III, 1909, pp. 159-162, H. SCHNEIDER claims that the so-called "pillar" mentioned in the Book of Kings as set up by Solomon, the sacred object before which King Josiah made a covenant, and which was carried away by Nebuchadnezzar, is a Jewish euphemism for an image of Yahu, or Yahweh, that stood in the Temple of Solomon at Jerusalem.

**The Position of the Altar of Burnt Sacrifice in Jerusalem.** — In *Pal. Ex. Fund*, XLII, 1910, pp. 15-22, C. M. WATSON contests the current theory that the altar of burnt offering in the Temple of Herod stood upon the site of the Sakhra or Sacred Rock in the modern Dome of the Rock, and maintains that the Sakhra was really the site of the Holy of Holies. *Ibid.* pp. 137-139 (fig.), J. M. TENZ defends the view that the Sakhra was the site of the altar, and shows that the measurements of the Temple courts given by Josephus and the Talmud correspond better with this assumption.

**The Ass in Semitic Mythology.** — In *S. Bibl. Arch.* XXXII, 1910,



pp. 64-72, C. J. BALL shows that the ass was a sacred animal among the primitive Semites, and that among the Babylonians the ideogram for ass is connected with the ideogram for heaven. Traces of this sanctity survive in the Old Testament in the names Anah and Anath, and in Genesis xxxiv, 24 we have a curious mythological reference to an Anah who found the she-asses (?) in the wilderness when he was grazing the he-asses of Zibeaon his father. The stories of Shamgar ben Anath, of Samson, and of Balaam also contain elements of mythology concerning the ass. In view of these facts, it is not impossible that the stories of classical writers that the Jews had an ass's head in their holy place at Jerusalem may have been true, and that the temple may have contained an image of an ass as a survival of an ancient religious emblem.

**The First Workers in Steel.**—In *Z. Ethn.* XLII, 1910, pp. 15-30, W. BELCK decides that the Philistines were the discoverers of the art of making steel. He relies on 1 Samuel xiii, 19-22, Joshua xvii, 16-18, Judges i, 19 and iv, 3, where the Philistines' and Canaanites' "iron" weapons and chariots must certainly have been of steel. He thinks the comparatively late introduction of steel among surrounding peoples is explained by supposing the Philistines to have developed the art, first, of iron working, and then of steel manufacture, in Crete, during some eight or ten centuries prior to their invasion of Canaan in the fourteenth or thirteenth century B.C., in the conquest of which they were aided greatly by their scythe-bearing chariots.

**A Causeway across the Dead Sea.**—In *Pal. Ex. Fund.* XLII, 1910, pp. 112-115 (2 figs.), A. FORDER describes an ancient causeway that formerly connected the peninsula known as the Lisân with the western shore of the Dead Sea. In the course of the last forty or fifty years the water of the Dead Sea has been steadily rising, so that the causeway is now submerged, but its course can still be traced by soundings made from a boat, and aged Bedawin still remember a time when they were able to cross on it. In the same article the description is given of a huge monolith known as Hajr Serbût, which is situated a short distance east of Kerak.

**The Jewish Royal Pottery Stamps.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 93-101; 143-152 (3 pls.), E. J. PILCHER claims that the stamped jar-handles which have been found in such numbers in the excavations in Palestine, and which bear a winged object and the words "to the king," followed by the names Hebron, Ziph, Socoh, or Memshath, do not belong to the period of the Hebrew monarchy, as has commonly been supposed, but date from the Persian period. The winged object on these seals is not a scarab, but is the winged disk which was the Persian royal emblem, and the king mentioned in these inscriptions is not a Hebrew monarch, but the great king of Persia.

**The Origin and History of the Minaret.**—In *J.A.O.S.* XXX, 1909, pp. 132-154, R. J. H. GOTTHEIL shows that the minaret did not exist in early Muhammadan mosques, but that it was derived from the towers of Christian churches in Syria and Mesopotamia, which in their turn were modifications of the ziggurats of ancient Babylonian temples.

**Recent Opinions on the Site of Calvary.**—In *Pal. Ex. Fund.* XLII, 1910, pp. 23-27, A. W. CRAWLEY-BOVEY summarizes the recent discussions of the site of Calvary, and urges a more favorable consideration of the site originally suggested by Thenius and followed by Conder and Gordon.



**An Inscription from Samaria.**—In *B. Soc. Ant. Fr.* 1909, pp. 296–300, Father LOUIS JALABERT criticises C. H. MOORE's restoration of the Latin inscription found by the Harvard Expedition at Samaria (*Harvard Theological Review*, II, 1909, p. 111) and proposes to read it, *I(oci) O(ptimo) M(aximo) mil(itēs) v[e]xi[l](arii) coh(ortium) Pa(nnoniae) Sup(erioris), cives Sisc(iani) [et] Vorceian(i) et Latobici, sacrum fecerunt.*

**Coins of Pella (Palestine).**—The publication elsewhere of a coin of Pella with the portrait of Lucilla gives W. KUBITSCHKE occasion to discuss various points concerning the coinage of this city, especially with regard to the Lucilla-portrait type. (*Num. Z.*, 1909, pp. 19–32; fig.)

**Claudia Apameia.**—In *B. Soc. Ant. Fr.* 1909, pp. 343–347, L. JALABERT discusses an inscription from Apameia (*Publications of an Amer. Arch. Exped. to Syria in 1899–1900*, Pt. III, No. 126) which shows that that town was designated as Κλαυδία and Ἀρτωνεινούπολις. The first name connects it with the Emperor Claudius, and the second with Caracalla.

**Roman Stamps in Jerusalem.**—In *R. Bibl.* VII, 1910, pp. 261–265, H. VINCENT reports certain small stone stamps now preserved in the museum of Baron Ustinow at Jerusalem. These contain specimens of early Christian art, and seem to have been used for stamping patterns on the wafers that were used in the eucharist.

## ASIA MINOR

**The Figure of an Amazon from Boghazkeui.**—In *S. Bibl. Arch.* XXXII, 1910, pp. 25–26 (pl.), A. H. SAYCE publishes a photograph and a sketch by Miss Dodd of Constantinople which show that the figure on the east gate of the Hittite capital at Boghazkeui, which is described by Winckler as “a figure of a king,” is really a figure of an armed woman warrior.

**The Hittite Inscriptions.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 259–268; 327–332, A. H. SAYCE continues his publication and attempted translation of Hittite inscriptions begun in preceding numbers of the same journal.

**The Lycians.**—In *Alt. Or.* XI, 1910, Pt. II, pp. 1–32 (6 figs.), T. KLUGE discusses the history of the Lycians, so far as it is known to us from the records of their neighbors; the inscriptions and the history of their decipherment; and the various archaeological remains that they have left in Asia Minor. In *Mitt. Vorderas. Ges.* XV, 1910, pp. 1–135, under the title ‘Studien zur vergleichenden Sprachwissenschaft der kaukasischen Sprachen. II. Die lykischen Inschriften,’ the same author publishes a careful study of the Lycian inscriptions with translation and commentary. He also attempts to construct a grammar, and gives a vocabulary as far as that is possible with the existing material. He thinks the language is Caucasian.

**Remains of Ancient Cults in Phrygia.**—In *R. Hist. Rel.* LIX, 1909, pp. 1–16 (4 figs.), E. BRANDENBURG argues that the steps, niches, and grottoes in various parts of Phrygia were for religious purposes. The steps, upon which offerings were probably placed, really represent a seated figure of a goddess. If she was a goddess of the mountains, the small niches and grottoes would be suitable resting-places for her, where she might be worshipped.

**A Celtic Cult in Galatia.**—A Celtic god Bussurigiuss, surviving into the third century A.D. in northern Galatia, has been found in three inscrip-

tions at Aktehe Tash, and is given belated recognition by J. G. C. ANDERSON in *J.H.S.* XXX, 1910, pp. 163-167. Both this author and W. M. Ramsay had previously said that the religion and ritual of the conquered Phrygians had entirely absorbed those of the Gallic conquerors in this region. The ending *-rigius* equals *regius*, as *-marus* in Bussumarus or Bussumarius, of Dacia and Moesia, equals *magnus*. With *-rigius* is to be compared *-rix* = *rex*, in Ambiorix, etc. Two villages mentioned in the inscriptions can be identified: Icotarium (Acitoriziacum of the Peutinger Table) at Elejik, one and one quarter miles from Atche Tash, and Malos, which figures in the life of St. Theodotus of Ancyra, at Kalejik, in the Halys valley.

**A Parthenon in Caria.**—In *B.C.H.* XXXIII, 1909, p. 547, THEODORE REINACH states that the dedication of a Parthenon of the mother of the gods published by him, *ibid.* XXXII, 1908, p. 498, was found at Apollonia in Caria.

**Miletus and Didyma.**—In *Jb. Kl. Alt.* XXV, 1910, pp. 103-132 (7 pls.; 7 figs.), A. VON SALIS gives a general account of the German excavations at Miletus and Didyma. He describes the theatre, public baths, market-place, bouleuterion, a heroön, and parts of the early town walls. The city destroyed by the Persians was about a third larger than the Graeco-Roman city. Great masses of vase fragments were found, dating from Mycenaean times and later. The Ionian remains rest directly upon the Mycenaean.

**Coins of Aegeae (Cilicia).**—A second example of a coin with the portrait of the Empress Cornelia Supera, wife of Aemilian, now, like the first, in the Vienna cabinet, and both struck at Aegeae, is described by W. KUBITSCHKE in *Num. Z.* 1909, pp. 19-24 (fig.), who treats also of another previously unpublished coin of the same city with a portrait of Otacilia.

**Survivals of Spoken Greek in Asia Minor.**—Studies of Greek dialects still spoken in villages of Cappadocia and at Silli, near Iconium, with phonetics, grammar, and specimens of tales, are published by R. M. DAWKINS in *J.H.S.* XXX, 1910, pp. 109-132 (3 figs.). In all but a few purely agricultural communities, the local dialects, which have been transmitted entirely without writing, are fast disappearing, being ousted on the one hand by Turkish and on the other, where the Greek element is more persistent, by the common modern Greek as taught in schools.

## GREECE

### ARCHITECTURE

**The "Old Temple" of Athena on the Acropolis.**—In the *Bulletin de l'Institut national genevois*, XXXVIII, 1909, pp. 145-165, G. NICOLE discusses the arguments of Dörpfeld and others, and decides that the Opisthodomos was a separate building, not a part of the Parthenon or of the old Hecatompedon, and that the old Hecatompedon did not exist after the erection of the Erechtheum. Pages 166-167 contain a bibliography.

**The Chalkothekē and the Monument of Nicias.**—In *Εφ. Ἀρχ.* 1909, pp. 211-238 (pl.; 17 figs.), F. VERSAKIS restores the Chalkothekē of the Athenian Acropolis as it was reconstructed in Roman times. The restoration is based upon architectural fragments found upon the Acropolis, which correspond to the dimensions of the foundations of the building. The stoa had Doric columns in front of an Ionic order supported by unfluted Corinthian columns.

thian columns, which stood close to the front wall. The author also discusses the site and date of the Nicias monument. The natural place for it is the precinct of Dionysus; and the foundations assigned to it by Dörpfeld, near the odeum of Herodes Atticus, are not suitable for such a building. The remains of the monument that were noted by Dörpfeld, together with others recently identified, point to a date earlier than that of the inscription which it bears. It may, then, have been originally erected as a choregic monument by the great Nicias, son of Niceratus, and later appropriated for a similar purpose by one of his descendants, the Nicias, son of Nicodemus, of the inscription.

**The Scene Buildings of the Dionysiac Theatre.**—With a detailed study of the remaining portions, or fragments, of the scene buildings of the Dionysiac Theatre, and with special reference to the publications of Dörpfeld and Puchstein on the subject, F. VERSAKIS attempts reconstructions of these buildings in Greek and in Roman times, and argues for an earlier chronology than has been advocated by these writers, for the Greek period. Thus, he sets the first stone building, of two stories, considerably earlier than Lycurgus, perhaps in the fifth century; and assigns to Lycurgus an extensive repairing, or rebuilding, with the greater part of the sculptured decorations and the originals of such as were actually executed in the time of Nero. The four large groups now in the bema of Phaedrus he thinks were a basement, perhaps of the *parascenia*, the satyrs and silenoi of two different heights, telamones for the upper and lower stories, and the kneeling satyrs, acroteria for the *parascenia*. All the marble cornices, epistyles, statues, and columns, and even wall blocks, were moved and often greatly altered in their use, in the reconstruction under Nero. (*Jb. Arch. I.* XXIV, 1909, pp. 194-224; 32 figs.) *Ibid.* pp. 224-226, W. DÖRPFELD replies briefly to Versakis, denying many of his alleged facts and promising a fuller treatment of the whole subject, with some revision of his own views published in 1896.

**The Amyclaeon Throne.**—A brief report of the results of excavations on the site of the Throne of Amyclaeon Apollo (see *A.J.A.* XIII, p. 354) was made at the June (1909) meeting of the Berlin Archaeological Society by E. R. FIECHTER of Munich, who was in charge of the work after the death of Furtwängler at Athens in October, 1907. Nothing could be found of the ground plan of the structure of Bathycles; but the fragmentary remains, many of them in very fine detail, show that a marble building of unusual construction stood here, and permit at least an attempt at restoration. The statue of Apollo with its altar-base and the seats for the other gods seem to have stood in front of the throne, in a "wide space" enclosed by a fence, or screen. (Pausanias, III, 18, 10 ff.) A lively discussion followed. (*Arch. Anz.* 1910, cols. 66-70.)

## SCULPTURE

**Cretan Influence in Early Greek Sculpture.**—In *Jh. Oest. Arch. I.* XII, 1910, pp. 243-304 (36 figs.), E. Löwy compares with the seated goddess from Prinia (*A.J.A.* XIII, p. 505) two torsos from Chios, a seated figure from Aigiorgitika in Athens, and a head from Eleutherna in Candia, and proves that the Chian School was not earlier than the Cretan. He shows,

further, that the Nicandra statue from Delos, the Chian ξάων of the Acropolis, the colossal Hera head of Olympia, the sphinx of Spata, the Aphrodite of Marseilles in Lyons, a female head wearing the *polos* from the Acropolis, the Hero of Chrysapha, and the man carrying a calf of the Acropolis, although differing in many respects, all show Cretan influence. The standing "Apollo" figures are also Cretan, in spite of individual differences; but the origin of the type, as well as that of the archaic seated figures, is to be found in Egypt.

**The Male Form in Archaic Greek Sculpture.**—In the *Bulletin de l'Institut national genevois*, XXXVIII, 1909, pp. 281–307 (17 figs.), W. DEONNA discusses the progress of Greek sculpture, as seen in statues of nude males, from the seventh century to the beginning of the fifth century, when the "law of frontality" ceased to be followed, and the great artists, reaping the fruits of the labors of their humble predecessors, produced their masterpieces.

**An Archaic Statuette.**—In *R. Arch.* XV, 1910, pp. 66–92 (2 figs.), CHARLES PICARD publishes and discusses an archaic stone statuette in the Louvre. Its clumsy forms and simple geometrical proportions (the height is divided into three equal parts; chair, trunk, head and hair) are ascribed to the limitations of the artist, rather than to any real style. The statuette is, no doubt, the work of some village stonecutter. The eight-rayed stars on the skirt and the covering of the breast are of Oriental origin, and help to date the figure between the beginning of the seventh century and the middle of the sixth. It was probably made in Peloponnesus, after Cretan models, about 600 B.C., before the coming of Dipoenus and Scyllis.

**The West Pediment of the Parthenon.**—A much-battered male torso found below the west front of the Parthenon (Laborde, *Parthenon*, pl. 58, 1), which was denied a place in the pediment by Michaelis (*Parthenon*, p. 202), is discussed by B. SAUER, *Ath. Mitt.* XXXV, 1910, pp. 65–80 (pl.; 5 figs.). The figure, a nude youth, was the second from the north end of the west pediment, between the "Cephisus" and "Cecrops." He was seated very much in the attitude of the latter, partly supported by his left arm, the hand resting on the floor of the pediment, his legs extending toward the angle.

**Attic Reliefs.**—In *Ath. Mitt.* XXXV, 1910, pp. 1–16 (4 pls.; 2 figs.), MARGARETE BIEBER publishes three reliefs from Athens. (1) Fragment of a votive relief to Asclepius, early fourth century. (2) Votive relief with representation of two ears, second half of the fifth century. Both of these reliefs were carried away, presumably from the Asclepieum, by Hessian troopers serving in the Venetian army which occupied Athens in 1687. (3) Relief representing Artemis killing a stag, closely connected in style with the Parthenon sculptures and to be dated about 430 B.C. It appears to be a metope from a small temple, perhaps a heroön of Hippolytus on the south slope of the Acropolis.

**New Interpretations of Ancient Reliefs.**—In a reprint of a part of his great work, *Τὸ ἐν Ἀθήναις Ἐθνικὸν Μουσεῖον*, I. N. SVORONOS gives new interpretations of seven Greek reliefs in the National Museum at Athens. No. 1421 (Arndt-Amelung, *Einzelaufnahmen*, Serie V, 1902, p. 23, 1250 [Löwy]), from Tanagra, is explained as Cybele, Satyrus, Dionysus, and five Maenads. No. 1422 (Arndt-Amelung, *Einzelaufn.* Ser. V, 1902, pp. 24 f., 1253 [Löwy]), from Tegea, is interpreted as Pluto, Persephone, Demeter,

Sterope, and a priestess. No. 1423, from Epidaurus (Arndt-Amelung, *Einzelaufl.* Ser. V, 1902, pp. 27 ff., No. 1256 [Löwy]; Furtwängler, 'zur Athena Lemnia,' *Sitzb. Mün. Akad.* 1897, pp. 289-292; Amelung, 'Athena des Pheidias,' *Jh. Oest. Arch. I.* XI, 1908, p. 207), is found to represent Asclepius, the saviour of Lacedaemon, being armed by Athena. The explanation is based in part upon the poem of Isyllus, lines 57-79. The date would be soon after 323 B.C. No. 2723, from Marusi, near the ancient Colonus (*Ath. Mitt.* XIII, 1888, p. 351, No. 640), is explained as Heracles standing before the gate to Hades at Colonus, while a father brings to him a youth to be initiated into the lesser Eleusinian mysteries. The Heracles resembles the so-called Idolino so closely that the name Heracles is proposed for that statue. The worship at Colonus of Athena and Hephaestus is discussed. The Heracles worshipped here was probably Heracles ἐν τῷ Ἑλαιεῖ. The chthonic sanctuaries at Colonus were transferred thither from the Areopagus when the Areopagus was included within the walls. Another relief (*Ath. Mitt.* XIII, 1888, p. 347, No. 603) is explained as Academus, who is identified with Echelus, Eurygyes, etc. Many questions of mythology, history, and archaeology are discussed. No. 1425 (*Ath. Mitt.* XI, 1886, p. 455, 7; Defrasse-Lechat, *Epidaure*, p. 86; Cavvadias, *Ἐφ. Ἀρχ.* 1895, pp. 180-184, pl. 8) is interpreted as Hebe, Zeus, Hera, and Nike, and is regarded as part of an altar of the twelve gods. No. 1426 (*Ἐφ. Ἀρχ.* 1885, pp. 44, 51; *Ath. Mitt.* 1886, p. 455, 4; *ibid.* 1892, p. 244, fig. 8) is found to represent Asclepius, Machaon, Podalirius, Epione, Panacea, Iaso, three sacred dogs, and a pair of suppliants. No. 1428, a gilded relief representing two ears, dedicated by Cutius (*Ἐφ. Ἀρχ.* 1885, p. 198, No. 102; *C.I.L.* Suppl. pars prior, p. 1311, No. 7266), is connected with the Cottius who dedicated to Augustus the arch at Susa, in Italy. The priests at Epidaurus probably wished it to be believed that the distant Gallic king had dedicated a carved block of solid gold. All the articles here published contain many discussions of details and of matters connected with the chief subjects of investigation. (I. N. Svoronos, *Νέαι Ἑρμηνείαι ἀρχαίων Ἀναγλύφων, ἀποσπάσματα ἐκ τῆς συγγραφῆς "Τὸ ἐν Ἀθήναις Ἑθνικὸν Μουσαῖον."* Athens, 1910, Société hellénique d'éditions. 71 pp.; 5 pls.; 24 figs.; 4to.)

**An Athlete's Gravestone.**—Two drawings from the early seventeenth century sketch-book in the library at Windsor Castle are reproduced and discussed by W. AMELUNG in *Jb. Arch. I.* XXIV, 1909, pp. 191-194 (2 figs.). They show in its complete state the stele with palaestra scene, a fragment of which, now in the Vatican, was published by the same critic, *ibid.* XVIII, 1903, pp. 109 f., and in *Vat. Cat.* II, No. 421. These drawings show that the boy originally held a strigil and leaned against a low pillar over which hung some drapery.

**Votive Relief from Phalerum.**—In *Ἐφ. Ἀρχ.* 1909, pp. 239-264 (2 pls.; 3 figs.), B. STAËS publishes a remarkably beautiful votive relief of about 400 B.C. (Fig. 1); its inscribed pedestal; the inscribed pedestal of the votive relief of Echelus (cf. *Ἐφ. Ἀρχ.* 1893, pp. 109 and 129, pls. 9-10; Svoronos, *Reliefs of the National Museum*, p. 120, pl. 28), which closely resembles the new relief in style and workmanship; and the boundary stone of a precinct dedicated to Hestia, Cephissus, Apollo Pythius, Leto, Artemis Lochia, Ileithya (*sic*), Achelous, Callirrhoe, Geraestae Nymphae



FIGURE 1. — VOTIVE RELIEF FROM PHALERUM.

Genethliae, and Rhapso. All these were found in what appears to have been the ancient bed of the Cephisus, in the space between the Long Walls to Piraeus, about 800 m. from the shore of Phalerum. The relief was dedicated by Xenocrateia of the deme Χολαιδῶν to the river-god Cephisus



διδασκαλίας τόδε δῶρον, an expression difficult to interpret. It was set up during the tenure in office of certain *τελευταί*, a class of religious officers hitherto unknown to us. The author offers the following interpretation of the relief itself: Xuthus, consulting the Delphic oracle in regard to offspring, meets Ion, the child of his wife, Creusa, by Apollo. The figures from left to right represent Apollo sitting on a throne in the form of a

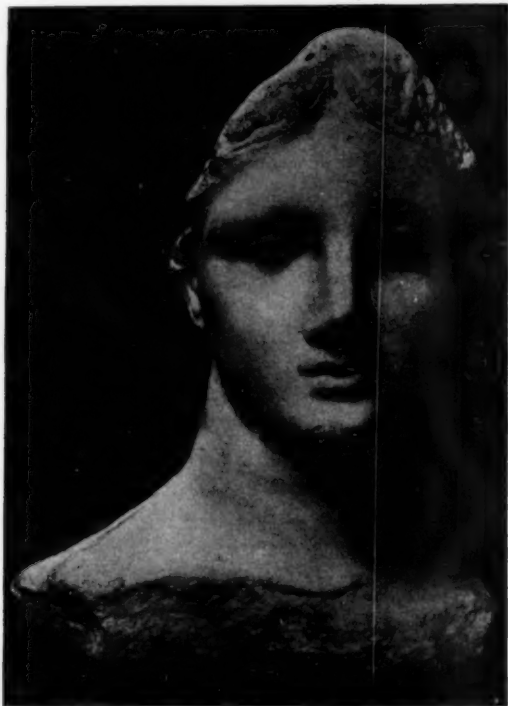


FIGURE 2. — MARBLE HEAD FROM CHIOS.

tripod, his feet resting on the Omphalos, beside which stand two eagles; Leto; Artemis; the Pythia, partly covering the figure of Artemis; Ion; Xuthus; (the scene then changes to Attica) Hermes; four Nymphs; a statue of Artemis (or possibly Eileithyia); a river-god, Achelous (or possibly Cephissus). The place of discovery is probably the Nymphaeum near Piraeus (cf. Wilhelm, *Jh. Oest. Arch.* I. V, p. 129, line 18, and Schoene, *Gr. Rel.* II, 28, 117).

**Attic Gravestone in Southern Italy.** — A gravestone of *aedicula* type, with the standing figure of a woman to whom a little girl is offering



some object, and with the surmounting inscription *Καλλίστη Φιλίππου τοῦ Ῥησμάχου Ταργετρίου γυνή, Λαυδίκη καὶ Εὐτυχία τὸ ἐπίσταμα*, is believed by P. Orsi to be truly Attic, and of a time later than the fourth century B.C. But it was found near Caulonia. Orsi believes it to have been brought there from Greece, perhaps in the second half of the fifteenth century, when swarms of Greeks and Albanians established themselves in Sicily, and not at all to indicate that demes like those of Attica existed in ancient Caulonia (which, he incidentally points out, must have been at some distance from the present Caulonia, which has borne that name only since 1860, having been called in mediaeval times Castel Vetere, doubtless from some Byzantine or Norman castle in the neighborhood). Lenormant (*La Grande Grèce*, II, pp. 271-273) has already pointed out that a Greek inscription revered at Catanzaro by the inhabitants as a witness of their ancient origin is also an importation from Athens. (*Not. Scav.* 1909, pp. 327-330; fig.)

**The Head of a Goddess from Chios.**—The Boston Museum of Fine Arts has recently received as a gift the remarkable head of a goddess (Fig. 2) said to have been found in Chios at the time of the Crimean War. The head was published in *Ant. Denk.* II, pl. 59, and has been discussed in *Jb. Arch.* I. XXIV, 1909, pp. 73 ff. (*A.J.A.* XIV, pp. 221-222) and elsewhere. It is undoubtedly an original Greek work and exhibits the manner of Praxiteles. No satisfactory name has yet been found for it (*B. Mus. F. A.* VIII, 1910, pp. 11-12; fig.).

**A Heracles Head in Berlin.**—In *Ber. Kunsts.* XXXI, 1910, cols. 197-200 (fig.), B. SCHRÖDER publishes a colossal marble head of Heracles found in three pieces in the Byzantine wall on the south side of the citadel at Pergamon and now in the Berlin museum. The head is bearded and of mediocre workmanship.

**The Laocoön Head at Brussels.**—In *Mon. Piot*, XVI, 1909, pp. 209-222 (2 pls.; 10 figs.), F. DE MÉLY publishes the fine Laocoön head in the possession of the Duke of Arenberg at Brussels and concludes that it is not ancient, but the work of Michelangelo. He also discusses briefly the documents relating to the discovery of the Vatican group.

**The Mercury di Ingenuo and the Perseus of Myron.**—In *Rend. Acc. Lincei*, XVIII, 1909, pp. 368-397, G. CULTRERA, in identifying the Mercury di Ingenuo of the Vatican Museum with the Perseus of Myron reviews many of the works attributed to this artist, as well as a large number of the known statues of Hermes. The wings on the head of the Mercury and his chlamys, which some regard as a later addition, he considers to be an essential part of the original "Perseus."

**A Heracles of Polyclitus.**—In *R. Ét. Anc.* XII, 1910, pp. 1-9 (pl.; 5 figs.), S. REINACH publishes a bronze statuette formerly in the collection of W. Rome in London and now supposed to be in Vienna. It is 9½ inches in height and represents a beardless Heracles standing nude with his weight resting on his right leg and his right hand on his hip. He wears the lion's skin on his head with the fore paws tied about the neck. The left hand held an object now missing. The writer suggests on the basis of a statuette at Würzburg that this object was part of the skin of the hydra. As the figure is clearly Polyclitan it is not unlikely that it reproduces the Heracles with lion's skin and the spoils of the hydra which Cicero (*De*

*Oratore*, II, 16, 70) implies was in Rome in his time and the work of Polyclitus.

**Demetrius Poliorcetes and the Victory from Samothrace.**—In *R. Arch.* XV, 1910, pp. 132-138, J. HATZFELD, after calling attention to the fact that the type of the Victory from Samothrace occurs, not only on the well-known coins of Demetrius Poliorcetes, but also on coins of many other places and on other monuments, calls in question Benndorf's generally accepted theory that the great statue was set up by Demetrius to commemorate his naval victory off Salamis in Cyprus. Samothrace formed part of

the kingdom of Lysimachus, who was always an enemy of Demetrius, though at that time the two were not actually at war. The victory was gained over Ptolemy, an ally and friend of Lysimachus. It is, therefore, not likely that it was commemorated by a statue set up at Samothrace. A fragmentary inscription, found by Champoiseau in 1891 at the site where the statue was discovered, bears the letters  $\Sigma\text{ΡΟΔΙΟ}\Sigma$ , and may well be part of the dedicatory inscription or the artist's signature. Samothrace and Rhodes were closely associated, and the probability that the statue is a Rhodian monument is great.

**The Maiden of Antium.**—In *C. R. Acad. Insc.* 1910, pp. 40-48, P. GAUCKLER discusses the priestess of Antium (Fig. 3) recently acquired by the Museo delle Terme (see *A.J.A.* VIII, p. 307; XI, pp. 356 and 460; XII, p. 224; XIV, p. 222). He argues that the head and right shoulder are of much better workmanship than the rest of the statue; and furthermore that they are of a pure white, translucent marble, while the body is of an opaque marble. The two parts do not fit together well. The head and shoulder alone are Greek



FIGURE 3.—MARBLE STATUE FROM ANTIUM.

work; the rest of the statue is a Roman restoration. The writer cannot decide whether the figure represents a youth or a maiden. In *Boll. Arte*, IV, 1910, pp. 41-48 (4 pls.), D. COMPARETTI argues that the statue represents Cassandra. Mrs. Arthur Strong declares it to be not a maid, but a boy, probably a *gallus*, priest of Cybele. Others, among them Simonetti (who arrived at this conclusion independently; see *La Tribuna*, end of December, 1909), agree. (*S. R., R. Arch.* XIV, 1909, p. 472.)

**The Maiden Athlete in the Vatican.** — The well-known statue in the Vatican of the maiden athlete at the start of the foot race at Olympia, according to the usual interpretation, is rather to be understood as a victorious Dorian *danseuse*, according to BRUNO SCHRÖDER (*Rom. Mitt.* XXIV, 1909, pp. 109–120; 6 figs.).

**The Statues of Mausolus and Artemisia.** — The position of the two surviving statues from the Mausoleum is discussed by J. B. K. PREEDY in *J.H.S.* XXX, 1910, pp. 133–162 (10 figs.). Reviewing the arguments previously cited for and against the placing of these statues in the crowning chariot, he finds that while the evidence of proportions is negative, the height of the male figure corresponding very well with that of the horses and of the wheels, so far as Asiatic usage is known, that of technique is absolutely against such a location, for the front of both statues is very carefully planned and executed down to the very ground, while the backs, which would alone be easily seen in the chariot, are comparatively ugly in design and very superficially treated. The figures must then have stood against some wall, perhaps the north side of the podium below the pyramid, whence they were carried down by the horses falling from above when the chariot group was dislodged by an earthquake. Finally, there is no reason whatever for supposing that the female statue represents Artemisia, since the finding of several similar heads shows that it was not unique; and although the male statue is certainly of royal dignity, it stood on one of the less important sides of the building, and may have represented any other of the princes of the family rather than the one in whose special honor the monument was erected.

**The Amazon Frieze of the Mausoleum.** — In *Jb. Arch.* I. XXIV, 1909, pp. 171–191 (2 pls.; 4 figs.), P. WOLTERS and J. SIEVEKING discuss the Amazon frieze and make an assignment of parts to the four artists somewhat different from that of Brunn. In this the types of horses, the draperies, attitudes, and grouping are all considered. In the work of Scopas alone is found the fullest originality and force. The style of Timotheus is compared with the sculptures from Epidauros, that of Leochares with Alexander's Hunting, and that of Bryaxis with the triangular base at Athens. To Bryaxis is assigned the doubtful Genoa relief which so closely resembles the Mausoleum frieze.

**The Gaul of Delos.** — In the museum at St. Germain the casts of a head in the museum at Delos (formerly at Myconos) and of the torso of a Gaul found by the sacred lake at Delos have been put together, with a result which proves that head and torso belong to separate statues, though several archaeologists have believed (cf. *R. Critique*, 1909, i, 282) that they belonged together. (*S. R.*, *R. Arch.* XIV, 1909, pp. 465–466; 2 figs.)

**Niobids.** — In *Sitzb. d. Heidelberger Akad. d. Wissenschaften*, 1910 (8te Abh., 31 pp.; 4 pls.; 15 figs.), R. PAGENSTECHER publishes two terra-cottas from Canosa, now in the Reimers collection in Hamburg, and an Arretine sigillata vase now in Heidelberg. Figures of Niobids are represented. The terra-cottas from Canosa were originally placed on a large vase. They reproduce, with variations, motives of works of sculpture. The Arretine vase copies earlier sculpture. The various figures of Niobids previously known are discussed. The Florentine Niobids probably belonged to a building, and were perhaps arranged between the columns; they may, however,

have stood together on a large base. The group is regarded as a work of the fourth century B.C.

#### VASES AND PAINTING

**Trick Vases and Vases for Dipping Wine.**— In the *Bulletin de l'Institut national genevois*, XXXVIII, 1909, pp. 207-233 (16 figs.), W. DEONNA discusses those vases in which simple principles of hydraulics are employed to produce peculiar results. Some of them are simply trick vases (*vases à surprise*), but most of them had a practical purpose; for instance, the vase could be filled from the bottom by plunging it into the liquid, and by stopping the upper orifice with his thumb whoever held the vase could keep the liquid from flowing out. In this way wine and water could be mixed and served. In other vases more elaborate arrangements enabled one to serve different liquids from the same vase, etc. These vases are classified in accordance with their internal arrangement. They are dated from pre-Hellenic to Roman times.

**The Painted Sarcophagus of Hagia Triada.**— In *Jb. Arch. I.* XXIV, 1909, pp. 162-170 (4 figs.), E. PETERSEN explains the scenes on the painted sarcophagus of Hagia Triada (*A.J.A.* XIII, pp. 209, 496-497) as a myth of the Seasons, naturally associated with human life and death. Many of the details, such as the cuckoo-god mating with the earth-goddess, are preserved in Hellenic mythology down to the time of Pausanias. In *Jh. Oest. Arch. I.* XII, 1910, pp. 305-318 (4 figs.), H. SITTE criticises the drawing on the sarcophagus and shows that there was a definite attempt at perspective.

**The Necropolis on Salamis.**— In *Ath. Mitt.* XXXV, 1910, pp. 17-36 (2 pls.; 31 figs.), S. WIDE describes the objects, chiefly vases, found in graves excavated on Salamis in 1893 (Cavvadias, *Les Musées d'Athènes*, pp. 25 ff.). The pottery shows a transitional style between the Mycenaean and the geometric. The occurrence of similar vases at Athens, Nauplia, Mycenae, Assarlik, and in Crete shows that they were made at a time when the Mycenaean trade routes between the coast of the mainland and the islands were still in use.

**The Dating of "Cyrenaic" Vases.**— In *J.H.S.* XXX, 1910, pp. 1-34 (15 figs.), J. P. DROOP gives a brief classification of "Cyrenaic" vases, now known through the finds at Sparta to be Laconian, with an analysis of the characteristics, so far as they affect the dating, of all known examples found outside of Sparta. The entire duration of the ware, 700-350 B.C., is divided into seven stages of development and decline, of which the exported vases, found in Samos, Ephesus, Naucratis, and many other sites, belong chiefly to classes III and IV. The earlier and later styles are first known through the finds at Sparta. The distinguishing marks of early date are entire white slip, a thin, sharp edge on the foot, and use of purple paint. The system of decoration as a whole is derived from geometric, and the forms are from metallic originals; the question of Ionic and other Oriental influence needs further study. Certainly the cylix had an independent development in Laconia, from the low bowl without foot. The Athenian vase painter Nicosthenes evidently knew and imitated this ware, and there is a whole class of Attic cylices of a less ambitious character that were made for commercial competition with it.

**A Funeral Amphora from Delos.**— In *Mon. Piot*, XVI, 1909, pp. 25-37

(pl.), F. POULSEN publishes a fragment, 0.60 m. high, of a large funeral amphora found at Delos in 1906. The decoration consists of parallel lines, bands of conventional lotus flowers, a braided pattern, etc., and one broad band adorned with human figures and animals. The only complete amphora of this size and style known to the writer was found at Thera; but several fragments came to light in Delos, and many small amphorae of the same style were found at Rheneia among the contents of the Delian tombs removed by the Athenians in 426 B.C. The vase probably dates from the seventh century B.C. and was made on one of the Cyclades.

**Panathenaic Amphorae.**—In his *Die Panathenäischen Preisamphoren* (Leipzig und Berlin, 1910, B. G. Teubner, 180 pp.; pl.; 37 figs. Svo. M. 6), G. VON BRAUCHITSCH publishes a study of the Panathenaic amphorae. He catalogues 130 numbers, including fragments. Their chronology, shape, and decoration, the costume of Athena, the columns and their emblems, the shield devices, inscriptions, the back side of the vases, their technique and destination, and the figure of Athena are discussed in turn.

**Vases with Scenes from the Homeric Poems.**—In *Mon. Piot*, XVI, 1909, pp. 99–136 (5 pls.; 9 figs.), E. POTTIER shows that in early Greek vase paintings the artist took the figures which he had inherited from the past and used them to illustrate scenes from the Homeric poems. He had heard the poems recited, but used his imagination when he tried to depict scenes from them. Thus the vases are not good evidence for the character of the poems in early times; but they show how knowledge of them became wider during the seventh century B.C. In the fifth century the paintings approached more closely to our text. The writer discusses several vases which lead him to these conclusions.

**The Ransoming of Hector.**—A fragment of a large vase, found at Naucratis in 1903, shows the lower half of a nude body lying stiffly on the ground, with portions of a couch and table near the feet. It is evidently from a picture of Achilles reclining at table receiving Priam. The subject is not uncommon, occurring first in bronze reliefs with the figures standing, but only two other examples are known of this "banquet" type. In view of Pollak's belief (*A.J.A.* III, 1899, p. 305) that this was essentially an Attic type, it is of interest to note that the Naucratis fragment is apparently from Asia Minor and perhaps from Clazomenae. (H. L. LORIMER, *J.H.S.* XXX, 1910, pp. 35–37; fig.)

**The Shade of Achilles.**—In *Ausonia*, IV, 1909, pp. 26–30 (fig.), N. TERZAGHI discusses the winged warrior in full armor flying over a ship, which appears on one side of a black-figured amphora in the British Museum (Walters, *Catalogue*, II, 154). He argues that it represents the shade of Achilles as imagined by Euripides (*Hec.* 110–112), and that the artist had in mind a passage in the *Little Iliad*.

**A New Illustration to the Iphigenia in Tauris.**—In *Jh. Oest. Arch.* I. XII, 1910, pp. 318–326 (2 figs.), V. MACCHIORO publishes a crater of unknown provenance in the museum at Pavia, but evidently of Cumaean manufacture. On one side stands a woman in the dress of a priestess at the right, towards whom a youth with his hands bound behind his back advances. A third figure follows holding a rope attached to the prisoner. The writer interprets this as a scene from the *Iphigenia in Tauris* of Euripides (Il. 469 f.), where Iphigenia orders the prisoners unbound.

**The Sacrifice of Iphigenia.**—In *Ausonia*, IV, 1909, pp. 98-108 (pl.), M. M. MICHELA discusses the monuments illustrating the sacrifice of Iphigenia and their relation to the famous painting of Timanthes.

**Dancing on Greek Vases.**—In *R. Arch.* XIV, 1909, pp. 351-369 (10 figs.), MARCELLE AZRA HINCKS discusses some representations of dancing on early Greek vases, and compares them with the dances of primitive peoples in modern times. The dances are expressions of erotic and (less frequently) warlike emotions.

**Cleophrades.**—A descriptive list of thirty-five severe red-figured vases assigned to Cleophrades, with nine others copied from or influenced by him, is given by J. D. BEAZLEY in *J.H.S.* XXX, 1910, pp. 38-68 (9 pls.; 4 figs.). Cleophrades was primarily a maker of large vases, amphoras, hydrias, and especially the calyx-crater, and his style is distinguished by



FIGURE 4.—VASE WITH LATIN INSCRIPTION.

massive figures with large heads, aquiline nose, and certain peculiarities of ear, breast-lines, etc. The lesser details were modified in the direction of simplicity in his middle and later periods by his experience in painting some smaller vases. He was the contemporary of Duris, and most probably a pupil of Euthymedes and master of Epictetus. Hartwig's ascription of his vases to an "Amasis II" is due to a misunderstanding of one of his few signatures.

**An Attic Vase Inscription.**—In *Hermes*, XLV, 1910, pp. 158-159, P. JACOBSTHAL argues that the inscription on one side of the Europa vase in Würzburg (Gerhard, *Auserl. Vasenb.* Pl. XC), read by Gerhard as Εὐρώπ[α] Ποσειδάδης, should be read Εὐρώπ[α], ταῖρος ἀναίδης.



**The Vagnonville Vase Again.** — In *Jh. Oest. Arch.* I. XII, 1910, Beiblatt, cols. 209–214 (fig.), J. DURM argues that the circles on the base of the mound on the Vagnonville vase (see *A.J.A.* XII, p. 228; XIII, p. 211) represent stoke holes such as are found in lime kilns, but on a monument of this sort they may be merely symbolical.

**Vases painted in Greek Technique, with Latin Inscriptions.** — In *Mél. Arch. Hist.* XXX, 1910, pp. 99–116 (2 pls.; fig.), CHARLES PICARD publishes two “*coupes à pocolom*” (Fig. 4) in the Vatican museum and a fragment of a large vase in the Kircher Museum. He concludes that these vases — all of Greek technique, with Latin inscriptions — were probably made in Campania, about the middle of the third century B.C. or slightly earlier, the fragment being earlier than the *pocolom* vases. They exhibit the influence of Tarentum upon Roman taste even after Tarentum was conquered.

**Apollodorus ὁ σκιαγράφος.** — That the question of the time at which the Greeks attained a full knowledge of perspective in painting depends largely upon the meaning of the word *σκιαγραφία* as applied to the art of Apollodorus, and that too narrow a meaning has been given it by modern writers, are the points argued by E. PFUHL, chiefly by citations from Plato, in *Jb. Arch.* I. XXV, 1910, pp. 12–28. He finds that *σκιά*, far from expressing only a contrast of dark and light, meant rather any representation or reflection of an object as compared with the object itself, and that *σκιαγραφία* in the fourth century expressed both parts of the modern “perspective,” i.e., angular decrease in size and variation in depth of color due to position.

**The Paintings of Panaenus at Olympia.** — One further suggestion for the arrangement of the pictures around the throne of Zeus at Olympia is made by C. H. TYLER in *J.H.S.* XXX, 1910, pp. 82–84. In each of the three groups of three scenes which Pausanias gives as on the screens under the back and sides of the throne, the first scene mentioned concerns Heracles. As his relation to the site requires special prominence for his adventures, it is probable that in each case the picture of Heracles was larger than the other two and in some way separate from them. It may, therefore, have stood below the crossbar on which the battle with the Amazons was sculptured in relief, while the other two pictures, dealing with emotional manifestations of divine power, came side by side above the crossbar, and so next to the kindred subject of Niobe and her children, which was carved around the edge of the seat itself.

**The Painted Stelae from Pagasae.** — In *Ath. Mitt.* XXXV, 1910, pp. 118–138, G. RODENWALDT discusses the painted stelae of Pagasae. As regards subjects and composition they throw less light on Greek panel paintings than do the Roman frescoes, since they are strongly under the influence of the Attic grave reliefs of the fourth century; but they afford important evidence as to the technique of encaustic painting in Greece.

**Landscape in Greek Art before Polygnotus.** — The landscape elements in Greek art before Polygnotus are discussed in a monograph by Margret Heinemann. In “Minoan” art real landscapes are found in frescoes and in metal work. Mycenaean art survived in Ionia, where at Miletus, Mycenaean graves have been found, and the Homeric shield of Achilles, as well as the Hesiodic shield of Heracles, must be regarded as not purely poetic imagining. This is proved by various other things and also by the gold work from southern Russia. The landscape elements in the “red-ware pot-



tery," the Protocorinthian and Corinthian wares, the Cyrenaic vases, the Caeretan hydriae, the vases wrongly regarded by Dümmler as Pontic, and the Etruscan wall paintings are derived from Ionia. The same is true of the similar elements in Attic black-figured vase paintings. The red-figured vase paintings are more distinctly drawings than the black-figured paintings are, and exhibit fewer landscape features until the time of the crater from Orvieto. This has been connected with Polygnotus, who was from Thasos. Evidently this crater exhibits qualities hitherto unknown in Attic vase painting; but careful comparison with the other vases which show marked features of landscape and perspective leads to the conclusion that this vase is earlier than the rest and is pre-Polygnotan, as distinguished from the Amazon vase from Ruvo and other works of the class which may be called Polygnoto-Miconian. The discussion is careful, covering many details and embracing many monuments besides vases. (*Landschaftliche Elemente in der griechischen Kunst bis Polygnot, von MARGRET HEINEMANN. Arbeiten aus dem Akademischen Kunstmuseum zu Bonn, II, 105 pp.; 17 figs. 8vo. Bonn, 1910, Friedrich Cohen. 4 mk.*)

#### INSCRIPTIONS

**The Disk from Phaestus.**—In *R. Arch.* XV, 1910, pp. 1-65 (22 figs.), A. J. REINACH discusses 'The Disk from Phaestus and the Peoples of the Sea' (see *A.J.A.* XIII, pp. 78, 500; XIV, p. 226). The movements of the various tribes mentioned in Egyptian and other writings as inhabiting or attacking regions near the eastern Mediterranean are sketched, and the conclusion is reached that the disk from Phaestus indicates more or less close relations as early as the eighteenth century B.C. between Crete and the peoples (chiefly, at least, Indo-European) who appear in Egyptian writings as "Peoples of the Sea." The writing on the disk is closely related to that of the Hittites. In *Rend. Acc. Lincei*, XVIII, 1909, pp. 297-367 (4 pls.), A. DELLA SETA makes an exhaustive study of the signs on the disk and concludes that it was not a negative matrix for the reproduction of positive copies; that the writing runs from the outer edge to the centre first of face A and then of face B; that the writing has as its basis a two-sign nucleus to which prefixes and suffixes might be added, or which might be united with other similar groups; that the signs have a partly ideographic and partly phonetic value, the ideogram always having its value through its phonetic character, while determinative signs are wholly lacking; that, finally, the groups of signs separated by vertical lines are not separate words, but complexes expressing separate ideas. Because the signs differ so completely from the other Cretan pictographs, and because the heads with a feather crown are not found elsewhere in Crete but appear in representations of the *Pulasati*, whom he identifies with the Philistines, he thinks the disk not indigenous. It may have been brought from Cyprus, which was perhaps the original home of the Philistines.

**A Rhodian Inscription.**—In *Rend. Acc. Lincei*, XVIII, 1909, pp. 263-264, A. SOGLIANO corrects Roehl's interpretation of ἀγε on an amphora found in Rhodes as equivalent to ἔδωκε (φορτία ἡμῖ, ἀγε δέ με Κλειτορίας, *I.G.A.* 473). He compares [*amphora*] *vecta* in an inscription published by him in *Not. Scav.* 1905, p. 257.

**The Victory of Agias at Olympia.**—In *Cl. Phil.* V, 1910, pp. 169-174, K. K. SMITH attempts to show that the date of the victory of Agias the Thessalian in the pancration at Olympia, recorded in an inscription at Delphi, should be placed in the year 460, thus filling the only lacuna in the Oxyrhynchus papyrus list of victors between 480 and 448, and making it necessary to date Pindar's second Nemean ode either before 480 or after 448.

**Report of the "Treasurers of the Goddess."**—In *Eφ. 'Αρχ.* 1909, pp. 197-210 (pl.), J. SUNDWALL publishes the inventory of treasure turned over by the outgoing *ταμίαι τῆς θεοῦ* of the year 344-343 B.C., of which *I.G.* II, 701, proves to be a part. The rather frequent occurrence of less than ten treasurers (eight here) may be explained by lack of candidates to fill vacancies caused by the rejection of certain members of the board at the *dokimasia*. The office of *ταμίαι τῶν στρατιωτικῶν* is seen to have existed at least as early as 346 B.C. About thirty talents of *στρατιωτικά* appear to be a fund made up of part of the yearly surplus of the general treasury, a measure to be associated with Athenian plans for war against Philip of Macedon.

**The Groups within the Attic Phratries.**—In *Ath. Mitt.* XXXV, 1910, pp. 103-117 (3 figs.), A. V. PREMERSTEIN publishes a boundary stone in Athens (first published by D. M. Robinson, *American Journal of Philology*, XXVIII, 1907, p. 430), recording a mortgage on a piece of land in the deme Anaphlystus. Of the five mortgagees, one is an individual, the rest are groups. Two of the latter (*Γλανκίδαι*, *Ἐπικλειδαι*) are the members of *γένη* in a phratry which is not named. The other two (*φράτερες οἱ μετὰ Ἐρατοστράτου*, *φράτερες οἱ μετὰ Νίκωνος*) are *θίασοι* within the same phratry.

**A Water-channel at Oropus.**—In *Ath. Mitt.* XXXV, 1910, pp. 81-102 (4 figs.), H. LATTERMANN discusses exhaustively the inscription *I.G.* VII, 4255 (Dittenberger, *Sylloge*<sup>2</sup>, 542; Michel, *Recueil*, 586), containing the specifications for the building of a stone channel to carry off the water from the men's bath at Oropus. With this he identifies foundations east of the sacred spring. An earlier short channel emptying into a neighboring stream proved unsatisfactory, because in stormy weather the level of the latter rose above that of the channel. This was obviated by the construction of the larger channel with a slighter slope, emptying into the stream above the high water level.

**An Inscription from Rhamnus.**—In *Eφ. 'Αρχ.* 1909, pp. 271-276, J. KIRCHNER publishes an inscription of the *Amphiaraistai* on a stele from Rhamnus, now in the National Museum at Athens, honoring the contributors to certain repairs made in the Amphiareum about 200 B.C. Some of the names may perhaps be identified with men already known; the names *Ὀνησιμίδης* and *Νεοπαίδης* are met with here for the first time.

**An Inscription from Gythium.**—In *R. Ét. Gr.* XXII, 1909, pp. 405-409, P. FOUCART proposes a new restoration of the inscription concerning a public physician brought from Gythium by Leake in 1839 and now in the British Museum. (See *Ancient Greek Inscriptions in the British Museum*, No. 543.)

**An Epigram from Imbros.**—In the first part of an epigram from Imbros (*I.G.* XII, 8), A. WILHELM restores the defective . Π . ΟΞΠΟΛΙΗΝ to *ἀπροσπολίην*, a new word, the two verses thus restored reading:

σώθη δ' εἰς πολλοὺς θρήνους μόνος, ἀθρόα κλαύσας  
ὄρφανίην, εὐνήν, οἶκον, ἀπροσπολίην.

The man laments the death of his wife, his son, and the πρόστολος of the house. (*Berl. Phil. W.* XXIX, 1909, col. 1646.)

**A Sepulchral Inscription from Smyrna.**—A sepulchral inscription from Smyrna, now in Athens, is published by E. NACMANSON, *Ath. Mitt.* XXXV, 1910, p. 177.

**A Note on the Orphic Tablets of Corigliano.**—In *R. Ét. Gr.* XXIII, 1910, pp. 58–61, R. PICHON points out that the expression ἐμφορὸς ἐς γάλ' ἑπετορ in the Orphic tablets from Corigliano does not necessarily imply a bath of purification in milk, but that any liquid might be substituted and called milk.

**Philip and the Surprise of Elatea.**—The consternation with which the Athenians received the news of the capture of Elatea by Philip is explained by a newly discovered passage from Philochorus and by inscriptions found at Elatea and Delphi. It is now known that in the summer of 339 Nicaea was held by the Thebans. But Philip, by making friends with the Epicnemidian Locrians and the Phocians, was able to enter central Greece and capture Elatea without first making himself master of Nicaea. (G. GLOTZ, *B.C.H.* XXXIII, 1909, pp. 526–546.)

**A Cypriote Inscription.**—In *Sitzb. Berl. Akad.* 1910, pp. 148–164 (2 pls.), R. MEISTER publishes an inscription on a terra-cotta tablet, found not far from Jastriká, in Cyprus, and now in the possession of Sir Henry Bulwer. The tablet is nearly complete. It is inscribed on both sides. Evidently a festival was in prospect, and certain persons, mentioned by name, had presented funds for it. The inscription is in the Cypriote syllabary and is earlier than the fifth century. It offers some linguistic and palaeographic peculiarities.

**Late Greek Inscriptions from Egypt.**—In *Jh. Oest. Arch. I.* XII, 1910, Beiblatt, cols. 205–208, W. CRÖNERT suggests a number of corrections in the late Greek inscriptions published by Lefebvre in *B.C.H.* XXVII, pp. 345–390, and in a few other Greek inscriptions from Egypt.

**The Cult of Cybele.**—A stone found in Sophia with a Latin and a Greek inscription relating to the cult of the Magna Mater, published by Filow in a Bulgarian periodical and in *Klio*, IX, pp. 253–259, receives a new discussion from O. WALTER, *Ath. Mitt.* XXXV, 1910, pp. 139–148 (2 figs.).

**Γάιος Βαλλινρός.**—Γάιος Βαλλινρός, the subject of two dedicatory inscriptions at Delos, has been identified by Boeckh with a Roman who failed to obtain the consulate as a result of Marius's holding of that office from 104 to 100 B.C. In *B.C.H.* XXXIII, 1909, pp. 443–444, P. ROUSSEL supports this identification.

**A Mention of M. Junius Brutus.**—In *B.C.H.* XXXIII, 1909, pp. 467–471, J. HATZFELD discusses an inscription from Delos, published *ibid.* III, 1879, p. 159, no. 7. One of the personages mentioned has been identified by Homolle as Q. Hortensius Hortalus, the son of the orator. The other, Καπίών, described as his nephew, is Brutus, the murderer of Caesar, who was adopted by his maternal uncle, Q. Servilius Caepio. The inscription is to be dated in the months after February, 43 B.C.

#### COINS

**Early Coinage.**—The French translation of the lectures of I. N. SVORONOS on early money is continued in *R. Belge Num.* 1910, pp. 125–151

(fig.), where the *λέβητες* and *επίροδες* of Crete are discussed (see *A.J.A.* XIV, p. 229). The English translation from the French is continued in *A. J. Num.* XLIV, 1910, pp. 14-21 (fig.).

**Fifth Century Coins of Corinth.**—Fifth century coins of Corinth are described and classified by C. OMAN in *Num. Chron.* 1909, pp. 333-356 (4 pls.). "The result of my later investigations does not in any way contradict the scheme of dates and periods which I laid down in the *Corolla Numismatica* in 1906, but it adds several subdivisions."

**Coins of Sinope and Pella (Decapolis).**—K. REGLING gives in *Num. Z.* 1909, pp. 15-18 (fig.), the result of an inspection of the coins of Sinope and Pella in the Berlin cabinet made in order to supplement or correct, in the case of Sinope, the *Recueil Général* of Waddington-Babelon-Reinach (Paris, 1904), and, in the case of Pella, to verify the pieces formerly in the possession of Reichardt.

**The Gold Medals from Abukir.**—At the May (1909) meeting of the Berlin Archaeological Society, R. WEIL added to his former discussion of the gold medals from Abukir (*Arch. Anz.* 1907, col. 402; *A.J.A.* XIII, p. 214; XIV, p. 229), the information that I. N. Svoronos, director of the coin cabinet at Athens and formerly the chief opponent of the genuineness of these medals, had withdrawn his doubts since having an opportunity to study the originals. The standing of the medals may, therefore, be considered as established. They are apparently prizes, *νικητήρια*, for the Alexandrian Olympic contests at Beroa in Macedonia. One of them confirms the belief that the emperor, Gordian III, was present at this festival in the autumn of 242 A.D. (*Arch. Anz.* 1909, cols. 555-558).

**Stamp to Certify Fineness of Metal.**—E. BABELON had believed that a certain square lead tessera with an impressed stamp bearing the words ΠΟΛΥΧΡΟΝΙΟΥ [or -OC] ΟΒΡΥΖΟΝ was a sort of tariff-weight to determine the amount of government seigneurage upon bullion presented at the mint for coinage (*R. Ital. Num.* XXI, 1908, pp. 45 ff.). W. KUBITSCHKE believes the tessera rather to be a mere proof-impression (possibly to be used for official verification) of a stamp to be impressed upon ingots of precious metal as official guaranty of their fineness. (*Num. Z.* 1909, pp. 33-37; figs.)

**Portraiture on Coins.**—'Portraiture and Its Origins in Greek Monetary Types' is the English title of an article by ERNEST BABELON, recently printed in the *Revue Numismatique*, and now translated in *A. J. Num.* XLIV, 1910, pp. 37-48.

**Comets on Ancient Coins.**—A French translation of an article on comets on ancient coins by DR. IMHOOF-BLUMER in the *Neue Zürcher Zeitung*, Feb. 19, 1910, is printed in *R. Suisse Num.* XVI, pp. 68-70.

#### GENERAL AND MISCELLANEOUS

**The Discoveries in Crete and their Relation to Egypt and Palestine.**—In *S. Bibl. Arch.* XXXI, 1909, pp. 280-285; 311-318 (3 pls.), H. R. HALL continues the series of articles on discoveries in Crete that have appeared in previous numbers of the same journal (*A.J.A.* XIII, p. 503; XIV, p. 230). He shows that from the Cretan civilization the Greeks derived their artistic spirit, and that without this foreign strain the Greek would have remained as much of a barbarian as other pure Indo-Europeans.

Crete and Cyprus owed nothing to the Phoenicians, but everything that was valuable in Phoenician art was borrowed from Crete. There is no archaeological evidence that there were any Semites in Cyprus before the eighth century, and this is an argument against the identification of Alashiya with Cyprus. All that the Phoenicians did was to disseminate their second-hand knowledge of Cretan civilization among the Greeks after the final fall of the Minoan culture. Phoenician colonies first appear in Cyprus in the time of Esarhaddon. There is no evidence of Babylonian influence upon the development of Cretan art. A vague influence may have been transmitted through Anatolia from Babylonia to Greece, but it was weak and intermittent, while Egyptian influence in the Aegean, and Aegean influence in Egypt have left many ineffaceable marks upon the art and civilization of both countries.

**The Minos Legends.**—In *Rh. Mus.* LXV, 1910, pp. 200-232, E. BETHE examines the legends connected with Minos in the light of modern archaeological discoveries. The association of the name with different places, as for example with Attica, the eastern coast of the Peloponnesus, Sicily, Gaza, etc., is evidence for the presence of Minoans at those places. Minos was the god of the Keftiu, and was represented as a bull. Hence the many bulls found at Cnossus. His worshippers held bull fights in his honor, vague traditions of which have come down in the stories of Heracles and of Theseus and the twice seven youths and maidens. Minos and the Minotaur are the same god under different forms. His symbol was the double axe between bull's horns. In later times Minos became identified with Zeus Asterius. Theseus freed Attica of the dominion of the Keftiu, who must have been in power there in the fifteenth century B.C.

**Minoan Religion.**—In the first of a series of studies on the Minoan divinities, H. PRINZ (*Ath. Mitt.* XXXV, 1910, pp. 149-176) discusses the representations of a goddess in Minoan art. Five types,—(1) goddess holding her hands to her breasts, (2) goddess with dove, (3) with snake, (4) with lions, (5) with flowers, are clearly to be identified with the great Mother of the Gods, these attributes all occurring in representations of that goddess on Babylonian and Hittite monuments. The correspondence shows that the earliest population of Crete was of Asiatic stock. Other types of a goddess found in Crete cannot be connected with the same certainty with the Magna Mater.

**Mycenaean Seals.**—In *Ath. Mitt.* XXXV, 1910, pp. 178-182, G. KARO gives a brief classification of Mycenaean gems and rings (3000-1000 B.C.), on the basis of datable specimens.

**Boœns.**—Some reflections of A. REICHEL on the primitive, "impressionistic" attitude of Creto-Mycenaean art toward the representation of nature, and the strongly contrasted, logical and orderly tendency of Hellenic art, with Homer standing on the threshold between the two, are illustrated by instances of the exaggeration of the eye as symbolic of the intellectual or spiritual element in human and divine (including bovine) nature. This is a constant feature in prehistoric Creto-Aegean art which lingered on in popular superstition at least to the time of the Attic red-figured eye-cylices. (*Jb. Arch.* I, XXV, 1910, pp. 9-12; 4 figs.)

**Date of the Neolithic Age in Thessaly.**—In *Arch. Anz.* 1909, cols. 406-415, A. JOLLES criticises certain conclusions reached by Tsountas in his

*Prehistoric Citadels of Dimini and Sesklo* (Athens, 1908), and calls attention to the fact that a given stage of culture reaches different regions at widely varying epochs. Tsountas, finding two stone periods, then a deep layer of accumulated earth, and then a bronze period similar to the Second City at Troy, infers that the last two civilizations are contemporary, in the third millennium B.C., and that the stone periods belong to the first and second halves of the fourth millennium. But a comparison of the pottery with that found at Zerelia would make the second stone period contemporary with one which is set by the English excavators in Thessaly at 2000-1800 B.C. Another doubtful point in Tsountas's otherwise very valuable book is the existence of a prototype of the Mycenaean megaron in the first stone period.

**The Sanctuary of Phylacus at Delphi.**—In *Εφ. Ἀρχ.* 1909, pp. 263-272, A. D. KERAMOPOULLOS discusses the topography of the precinct of Athena Pronaia and its relation to the site of the sanctuary of Phylacus, arguing that the latter was not situated along the lower road in front of the temples of the precinct, as Poulsen (*Acad. royale des sciences et des lettres de Danemark*, 1908, pp. 372 ff.) claims, but, according to Herodotus, VIII, 39 and Pausanias X, 8, 6 f. and the existing remains, must have been to the east of the precinct, behind and above it along the upper road, the modern carriage road.

**The Gold Mines of Scaptesyle.**—In *Klio*, X, 1910, pp. 1-27, P. PERDRIZET shows that the gold mines at Scaptesyle in Thrace were placer mines; that the large amount of gold which Herodotus (VI, 46) says the Thasians received from them represents the amount taken out during the first year or two after their discovery, and not the usual income at a later date; that the Athenians did not obtain possession of these mines after the reduction of Thasos, but that they were recovered by the Thracians.

**Bronze Working.**—In *Z. Bild. K.* XXI, 1910, pp. 219-224 (10 figs.), E. PERNICE describes briefly the methods of working bronze in antiquity by hammering, casting, engraving with bronze and later with iron tools, and damascening. He argues that the Greek artists strove to have their statues retain their original polish as long as possible, and that gilding was used to produce the same effect. A patina was never intentional on the part of the sculptor, but was something to be avoided.

**The Trial of Phidias.**—Under the title *Le procès de Phidias dans les chroniques d'Apollodore* (Geneva, 1910, Librairie Kündig. 50 pp.; pl.), J. NICOLE publishes two fragments of papyrus which once formed part of the lost *Chronica* of Apollodorus. They have to do with the trial of Phidias. They are much mutilated, but the writer is able to show from them that Phidias was accused of stealing some of the ivory for the Athena Parthenos, not gold, as Plutarch says; that the Athenians apparently sent to the northeast coast of Africa to obtain ivory for the statue; that after his accusation Phidias was released on bail, the Eleans depositing forty talents as security so that he might complete the statue of Zeus; that the famous owl of Phidias was dedicated on the Acropolis in the year 440-439. The book is discussed by F. STÄHELIN in the *Basler Nachrichten*, April 17, 1910.

**Cremation among the Greeks.**—In *La crémation et le séjour des morts chez les Grecs* (Brussels, 1909, Lamertin. 32 pp. Reprinted from *Mém. de la Soc. d'anthropologie de Bruxelles*, XXVII), J. DE MOT discusses cremation among the Greeks, arguing that it originated in an attempt to prevent the



spirit of the dead man from returning and troubling his relatives. The Egyptians had the same purpose in mind in making the burial chamber of the pyramids difficult of access; and the Babylonians in using jars of two pieces fastened together after the body had been placed inside. Water was also a barrier to return, but fire was the most effective preventive.

**Greek and Etruscan Mirrors.**—In *Proceedings of the Numismatic and Antiquarian Society of Philadelphia*, 1910, pp. 187–197 (8 figs.), J. C. ROLFE discusses ancient mirrors, especially those of the Greeks and Etruscans.

**The *τέρριξ*.**—In connection with the discussion of Hauser and Petersen as to the meaning of *τέρριξ* in Thucydides, I, 6 (see *A.J.A.* X, p. 457; XI, p. 225; XII, p. 233; XIII, p. 221), L. KJELLBERG argues (*Eranos*, IX, 1909, pp. 164–175) that it was really a golden wire wound about the hair.

**A Catalogue of Dissertations.**—G. FOCK has published a second edition of his catalogue of classical dissertations. Nos. 25725 to 27273 have to do with archaeology; and Nos. 27274 to 27395 with numismatics. (*Catalogus Dissertationum Philologicarum Classicarum*. Editio II. Leipzig, 1910, G. Fock. 652 pp. 8 vo. M. 7.20.)

**Meurer's Ornament and Plant Forms.**—At the April (1909) meeting of the Berlin Archaeological Society, M. MEURER's monumental work, *Vergleichende Formenlehre des Ornaments und der Pflanze*, was shown. It consists of two distinct publications, viz. a set of 250 large charts, ca. 40 × 30 inches, for use in classes and lectures, and a handbook, ca. 14 × 10 inches, containing reduced copies of the charts with many other illustrations and 600 pages of text. The handbook is intended for the use of artists and all interested in historic ornament, as well as for teachers. (*Arch. Anz.* 1909, cols. 548 f.)

**Two Epigrams of Crinagoras.**—In *R. Arch.* XV, 1910, pp. 139–141, G. ANCEY explains the last two lines of the epigram by Crinagoras, *Anth. Pal.* IX, 284, as a reference to the industry of grave-plundering at Corinth to satisfy the Roman taste for early bronzes and pottery. Another epigram, *Anth. Pal.* VII, 633, seems to give the date of the death of Cleopatra Selene, wife of Juba of Mauretania, by reference to an eclipse of the moon, which must be the eclipse of March 22, 5 B.C.

## ITALY

### ARCHITECTURE

**The Baths of Agrippa.**—In *Die Thermen des Agrippa* (Rome, 1910, Loescher & Co. 43 pp.; 4 pls.; 13 figs.), CH. HUELSEN publishes a study of the baths of Agrippa based upon the plans of Baldassarre Peruzzi, of Andrea Palladio, and the fragment of the *Forma Urbis Romae* found in 1900. The southern boundary of the baths was near the middle of the Corso Vittorio Emanuele. A restoration is attempted.

**The Baths of Diocletian.**—In *Boll. Arte*, III, 1909, pp. 401–405 (plan; 12 figs.), C. RICCI discusses the condition of the baths of Diocletian and the plan by which all modern buildings, except Michelangelo's Church of the Angels, will be removed. The structure will be one of the most conspicuous in Rome and occupied by the National Museum.

**The Cella Soliaris in the Baths of Caracalla.**—In the baths of Caracalla was a *cella soliaris*, the ceiling of which was supported by an invisible



frame of bronze (*Vita Caracallae*, IX, 4-5). The name *soliaris* is derived from *solium*. From African inscriptions (*C.I.L.* VIII, 10608, *Recueil de Constantine*, XL, 1906, p. 417, No. 377; p. 422, Nos. 48 and 411), Festus (s. v. *solia*), Palladius (*Agric.* I, 39, 3-4), and Celsus (I, 3, 4) it is evident that *solia* were individual bathtubs and *cella soliaris*, apparently identical with *caldarium*, the room containing the *solia*. (F. G. DE PACHTERE, *Mél. Arch. Hist.* XXIX, 1909, pp. 401-406.)

**The Villa of the Quintilii.**—In *Ausonia*, IV, 1909, pp. 48-88 (20 figs.; 4 plans), T. ASHBY gives an account of the excavations made at different times since the eighteenth century on the site of the villa of the brothers Quintilii five miles from Rome. He also discusses the evidence for the identification, and describes the extant remains.

**Details of the Porta Aurea at Spalato.**—In *Jh. Oest. Arch.* I. XII, 1910, pp. 340-342 (fig.), G. NIEMANN discusses the two niches at the sides of the Porta Aurea in the palace of Diocletian at Spalato, correcting the restoration of B. Schulz (*Jb. Arch.* I. XXIV, pp. 46 ff.; *A.J.A.* XIV, p. 237).

### SCULPTURE

**Archaic Statuettes in Pavia.**—In *Ausonia*, IV, 1909, pp. 3-25 (8 figs.), V. MACCHIORO discusses two archaic bronze statuettes of unknown provenance for many years in the Civico Museo at Pavia. One is a very primitive nude female figure 8.6 cm. high in the attitude of the Venus pudica. It belongs to the Villanova period, and proves the existence of a religious sentiment among the Italians of that age which must have come into Umbria from the East. The second figure is male, 9.6 cm. high, standing stiffly with legs close together and arms hanging at a distance from the sides. A necklace of a triangular pattern is about the neck. The writer compares it with certain statuettes of Egyptian gods, and concludes that both figures represent divinities of generation.

**Roman Reliefs.**—Notes on various scattered fragments of Roman reliefs are published by W. AMELUNG in *Röm. Mitt.* XXIV, 1909, pp. 177-192 (pl.; 8 figs.).

**The Heads in the Medallions on the Arch of Constantine.**—In *R. Arch.* XV, 1910, pls. I-XVII (fig.; pp. 118-129), S. REINACH publishes the heads in the medallions on the Arch of Constantine from the casts in the museum at Saint Germain. He favors the opinion that the medallions relate to Hadrian. In a note, S. DE RICCI identifies heads No. 5 and No. 15 with Carus and Carinus (fig.). Reinach recognizes Antinous in head No. 17 and perhaps in No. 2. F. STUDNICKA, pp. 129-131, recognizes Constantine in Nos. 3 and 9 (medallions 1 and 3), and Carus in No. 5 (medallion 2), but not Carinus in No. 15 (medallion 4). He thinks the profile in medallion 4 may be Constantius Chlorus, but does not recognize Antinous anywhere with certainty. In the reliefs of the north side he concludes that the emperor is Trajan and that Hadrian is his companion.

### PAINTING

**Oscan Tomb Painting.**—All that is known of painted tombs in Campania, Samnium, and Lucania, whether still preserved or, as in many cases, now lost, is brought together and discussed by F. WEEGE in *Jb. Arch.* I.

XXIV, 1909, pp. 99-141 (6 pls.; 15 figs.). He finds that the custom of painting the walls of tombs, as doubtless also of houses, was introduced into southern Italy by the Etruscans when they settled in Capua, Nola, and Paestum in the fifth century B.C.; that after their expulsion, during the fourth century, the art was developed on strictly national lines, though always confined to the wealthy; and that it died out under Roman domination. The scenes may be classed as, (1) funeral ceremonies; (2) the after-world; (3) daily life on earth. Striking features in the first class are the bringing home of the dead or dying warrior on his horse behind another rider; the display of the enemy's girdle and bloody shirt as trophies, illustrative of Homeric and other allusions; and the bloody duels fought by professional duelists at the grave, in which may be recognized the Oscan, not Etruscan, origin of gladiators at Rome and a reason for the always close connection of Capua with gladiators. The paintings also confirm Helbig's belief that the use of mounted warriors was introduced by the Greeks first into middle and southern Italy, and thence passed, about 300 B.C., to the Romans. In their equipment the same transition can be traced here that took place at Athens about 475 B.C. and later at Rome, from a species of heavy-armed dragoons, fighting on foot but provided with horses for quick movements, to regular light-armed cavalry, with helmet, lance, short whip, and spurs.

#### INSCRIPTIONS

**Roman Inscriptions.**—Among the many inscriptions from the city of Rome published in recent issues of *Not. Scav.* may be mentioned those to a professed Epicurean philosopher (1909, p. 303); and to an *ornatrix* and *aurefex de uico longo* (*ibid.* p. 311); a fragment of a *laterculus militaris* of a century of the tenth city cohort (*ibid.* p. 431); a sepulchral inscription of an *adiutor summarum rationum tabularii* (*ibid.* p. 432); a bronze inscription (found in the Tiber) to a *procurator praetorii Fidenatium Rubensium et Gallinarum Albarum* (*ibid.* pp. 433-436; 2 figs.); an inscription to a *tabularius mensurum aedificiorum*, and another to a *uilicus saeptorum operarum publicarum* (*ibid.* p. 437). The region between the Via Sabaria, Via Pinciana, and Corso d'Italia continues to yield great numbers of sepulchral inscriptions (*ibid.* pp. 309 ff.; 454 ff.).

**The Inscriptions of Gaionas.**—In *B. Soc. Ant. Fr.* 1909, pp. 285-287, C. BRUSTON discusses the two inscriptions of Gaionas recently found on the Janiculum. The first he translates, "(This fountain has been erected) in order that the strict pledge which Gaionas, the *δειπνοκρίτης*, laid upon himself may furnish an offering to the gods." The *δειπνοκρίτης* was a sort of toastmaster, who led the conversation, fixed the number of cups to be drunk, etc. The title was probably connected with that of *Κίρτιβερ Πώμης* and of *Cistiber Augustorum*.

**Hebrew Inscriptions from Benevento.**—Hebrew inscriptions from the cemeteries of Benevento and Venosa are discussed by V. CASTIGLIONI in *B. Com. Rom.* XXXVII, 1909, pp. 75-96.

**An Inscribed Bronze Disk from Egypt.**—In *Röm.-Germ. Kb.* III, 1910, pp. 9 f. (2 figs.), A. VON DOMASZEWSKI discusses a bronze disk from Egypt, published by Rostowzew in a Russian periodical and belonging to the Golenischew collection. The disk is perforated, bearing in the centre

the wolf with the twins, with an inscription around it: LEG VI FERR F C FEL. By comparison with analogous objects the writer concludes that this was a girdle ornament, and reads the inscription: *Leg(ionis) VI ferr(atae) f(idelis) c(onstantis) fel(icis)*. The sixth legion "ferrata" was formed by Caesar. The wolf with the twins alludes to the Italian origin of the legion.

**Latin Inscriptions in Baltimore.**—In *The American Journal of Philology*, XXXI, 1910, pp. 25-42, H. L. WILSON publishes sixteen more Latin inscriptions at Johns Hopkins University (see *A.J.A.* XIII, p. 513).

**Epigraphic Bulletin.**—In their review of epigraphic publications for September-December, 1909 (*R. Arch.* XIV, 1909, pp. 489-533), R. CAGNAT and M. BESNIER give the text of 113 inscriptions relating to Roman antiquity, with notes on epigraphic publications and full indices. *Ibid.* XV, 1910, pp. 325-340, the review for January-April, 1910, contains the text of sixty-seven inscriptions, seven of which are in Greek, and notes on epigraphic publications.

### COINS

**Early Italian Coinage Systems.**—A comparative summary in parallel columns of his own and Mommsen's theories on early Italian coinage systems is printed by E. J. HAEBERLIN in *Boll. Num.* VIII, 1910, pp. 33-37.

**Gallic and Roman Republican Coins from Gerenzago.**—At Gerenzago (Transpadana) a hoard of coins, already mentioned in *Not. Scav.* 1908, p. 360, proved to contain fifty-four Gallic coins (of which forty-three were imitations of Massiliote coins, with the legend DIKOI), and sixty-eight Roman republican coins (sixty-six *denarii* and two *quinarii*). These last were of thirty-four different types, ranging in date from the early years of the silver coinage to the end of the second century B.C., and including some rare types. (S. RICCI, *Not. Scav.* 1909, pp. 299-301.)

**Last Copper Coinage of the Roman Republic.**—Under the title, 'Last Copper Coinage of the Roman Republic,' M. BAHRFELDT describes (*Num. Z.* 1909, pp. 67-86; pl.) the coins of Cn. and Sex. Pompeius, Eppius, Cn. Piso, C. Clodius, Q. Oppius, and L. Atratinus, thus concluding a series of papers which all treat of the same general theme and have been published in periodicals and also separately, viz.: 'Roman-Sicilian Coins of the Republican Period' (*R. Suisse Num.* XII, 1904); 'Coinage of the Prefects of the Fleet under M. Antony' (*Num. Z.* XXXVII, 1905); 'Provincial Copper Coinage under M. Antony' (*Rev. Int. d'Arch. Num.* XI, 1908).

**The Treasure of Boscoreale.**—In *Le Musée*, VI, 1909, pp. 259-265, C. CANESSA classifies the gold coins found on the site of the villa of Maxima at Boscoreale in 1895. No coin is later than 78 A.D., and the fine condition of the coins of Galba, Otho, and Vitellius indicate that Maxima had begun to accumulate this treasure about the year 68 A.D.

**Commemorative Asses and Dupondii of Augustus and Agrippa.**—In *Riv. Ital. Num.* XXIII, 1910, pp. 21-31 (pl.), L. LAFFRANCHI assigns the commemorative *asses* and *dupondii* of Augustus and Agrippa to the proper years of their emission, basing his study chiefly upon their stylistic characters. The coins of Agrippa are demonstrated by him to have been issued for the most part during the reign of Caligula.

**The As and the Libella of Volusius Maecianus.**—The *as* and the

*libella* of Volusius Maecianus are discussed by M.-C. SOUTZO in *R. Belge Num.* 1910, pp. 152-165, who concerns himself also with an article on the *sestertius* recently published by G. DATTARI in the *Revue Numismatique*. According to Soutzo, the *as* of Maecianus has nothing to do with an actual coin, but is merely an expression for the fraction  $\frac{1}{4}$ ; the *libella* is the true monetary *as* of the time of Maecianus; the *denarius* of Nero had the value of forty *asses*, and the *sestertius*, of ten *asses*.

**Constantinian Coinage.** — LORENZINA CESANO published in *Rend. Acc. Lincei*, XVII, 1908, pp. 237-256, an inscription of the year 323 A.D., found at Feltre, commemorating a memorial fund, from which the specified income is stated in terms of coinage. W. KUBITSCHKE points out that this inscription proves that the *siliqua* was coined before 323, instead of considerably later, as had previously been supposed, and that the existence of the *aureus* is here assignable to an earlier date than had before been proposed for it. Much other valuable discussion is included in the article. (*Num. Z.* 1909, pp. 47-66.)

**Coins of Constantinus Iunior as Augustus.** — An article by OTTO VOETTER pictures and describes precisely the issues of the various mints during the period 323-340 A.D., thus furnishing means, among other things, for determining the beginning and end of the coinage with the names of Helena, Fausta, and Theodora, and for discriminating between the emissions of Constantinus I and of Constantinus II. (*Num. Z.* 1909, pp. 1-14; atlas of 16 pls.)

**Iuno Moneta.** — In *Num. Chron.* 1910, pp. 1-12 (3 figs.), A. W. HANDS prints a summary with some discussion of ERNST ASSMANN'S paper on Iuno Moneta, which was published in *Klio*, VI, pp. 477 ff. Dr. Assmann argues that the name Moneta came to the Romans from the Semitic Machanath, meaning "camp," which was found on the silver coins of Carthage current in Sicily and Italy before the Punic wars. Mr. Hands would still cling to the popular derivation.

**Homonyms in Roman Mint-marks.** — L. LAFFRANCHI continues his studies of the various styles in Roman coinage by emphasizing the importance of recognizing the especial style of a given imperial mint, even when its geographical site is changed. Only thus especially can the provenance of a given issue be determined, when mint-marks are liable to confusion through homonymy. Examples of the mode of decision are given from the mintage of Siscia, Serdica, and Cyzicus, of Ticinum and Treviri, of Alexandria and Antioch. (*Riv. Ital. Num.* XXIII, 1910, pp. 31-36; pl.)

**The Bureau of Weights and Measures and the Office of the Mint in Imperial Rome.** — The connection of the coin-types of *Aequitas* and *Moneta* leads R. MOWAT to an exhaustive discussion of the relation between the Bureau of Weights and Measures and the Mint, especially as made out from coins. (*Num. Z.* 1909, pp. 87-116; pl.; figs.)

**Retouched Roman Medallions.** — F. GNECCHI, in *Riv. Ital. Num.* XXIII, 1910, pp. 11-20 (pl.), deplores the destructive work of the burin of the seventeenth century and later restorers of Roman medallions, and gives some precise demonstration of the havoc wrought by their art. He is inclined to believe that at least a third of existing specimens show destructive traces of such operations.

**Ancient Processes of Counterfeiting.** — G. DATTARI combats, in *Boll.*

*Num.* VIII, 1910, pp. 3-4, 17-20, 49-56, the reasonableness of the suggestions advanced by M. PICCIONE in the *Monthly Numismatic Circular*, February, 1909, concerning the methods followed by ancient forgers in casting *denarii*, and proposes a theory of his own, proceeding also to answer objections brought by Piccione (*ibid.* June, 1909) against the views set forth by him in *Boll. Num.* VII, pp. 33-38 (see *A.J.A.* XIII, p. 514) on the subject of plated and dentellate Roman coins. See also the communication by Piccione in *Mb. Num. Ges. Wien*, VIII, 1909, pp. 19-22 (*A.J.A.* XIII, p. 502).

**Chrysopolis.**—W. KUBITSCHKEK condemns as a forgery of Luigi Cigoi a lead coin with the inscription *Chrysopolis Aquileia*, published by MAIONICA in *Jh. Oest. Arch. I. II*, Beiblatt, col. 105. With this text Kubitschek goes on to trace the history of this city name in the Middle Ages, especially as connected with Parma. (*Num. Z.* 1909, pp. 38-46; fig.)

#### GENERAL AND MISCELLANEOUS

**The Nuragic Temple of Sardinia.**—In *Rend. Acc. Lincei*, XVIII, 1909, pp. 579-592 (6 figs.), L. MILANI gives a preliminary report on the nuragic temple discovered by Taramelli in Sardinia between Isili and Gergei near the mediaeval church of S. Vittoria. A round *puteus sacer* in the apse-shaped end of the temple, built of carefully cut stones, and having an approach by stairs to its very bottom, reminds him of the Temple of Romulus as recognized by him beneath the *lapis niger* of the Roman Forum. The sacrificial table, which has stone benches on both sides, he compares with a votive model of a Sardinian temple in the museum of Cagliari, and with a model of a ship in the same place, in order to connect Sardinian antiquities with Etruria, Crete, Lydia, Babylonia, and the Tower of Babel.

**The So-called Palafitte of the Sarno.**—In *Rend. Acc. Lincei*, XVIII, 1909, pp. 265-270, G. PATRONI controverts not only E. Pais's original idea (*ibid.* XVII, 1908, pp. 459 ff.) that he had discovered in the valley of the Sarno remains of lake dwellings, but also his later theory that the remains are those of a palisade. He is opposed to any further excavation in this place.

**Oscan Dress and Armor.**—The dress and military equipment of the Oscan tribes as illustrated by vase and tomb painting, terra-cottas and citations from Roman writers, are discussed by F. WEEGE (*Jb. Arch. I.* XXIV, 1909, pp. 141-162; 11 figs.) as a supplement to his article on Oscan tomb-painting (*ibid.* pp. 99 ff. See pp. 517 f.). Here he finds a Campanian origin for certain Roman usages and articles which have been credited to the Etruscans, such as the single broad stripe on the senatorial toga. The ordinary man's dress seems to have been a very short tunic, lengthened somewhat in front, to which a second still shorter shirt or a small mantle was added in cold weather. The women wore a long belted gown and a cloak clasped around the neck. Head-dresses varied with the locality. In armor, the development of the breast-plate made of three small disks is traced and connected with Livy's much discussed *spongia pectoris tegumentum* (IX, 40). The marked use of linen among the Samnites may have a ritual significance.

**Lydians in Umbria.**—In *Ausonia*, IV, 1909, pp. 89-97, V. COSTANZI argues against the probability of the story of Herodotus (I, 94) that Lydians settled in Umbria.

**The Origin of the Romans.**—In *Ann. Arch. Anthr.* II, 1909, pp. 187-193, T. E. PEET attacks the conclusions reached by Ridgeway and Conway as to the origin of the Romans and shows that they were a mixed race consisting of Ligurians and *terremare* people. It is not, however, possible at present to identify these elements with plebeians and patricians.

**The Magna Mater and the Trojan Origin of Rome.**—The connection between the cult of the Magna Mater and the legends of the Trojan origin of Rome, together with the importance which this cult had for the Roman aristocracy, are treated at length by S. AURIGEMMA in *B. Com. Rom.* XXXVII, 1909, pp. 31-65.

**The Etruscan Language.**—In *Memnon*, III, 1910, pp. 167-174, T. KLUGE argues that Etruscan is connected with the languages of the Caucasus and compares certain Etruscan words of which the meaning is known with Caucasian words. A better knowledge of these languages will aid in solving the Etruscan problem.

**The Topography of Praeneste.**—Further contributions to the topography and monuments of Praeneste, by D. VAGLIERI, may be found in *B. Com. Rom.* XXXVII, 1909, pp. 212-274 (11 figs.). He is inclined to place the Temple of Fortune on the upper site.

**Ancient Remains at Cumae.**—In *Boll. Arte*, IV, 1910, pp. 105-122 (18 figs.), E. GABRICI describes the ancient remains at Cumae, and gives a brief account of the excavations carried on there.

**The Remains of Ferentinum.**—An interesting account of the remains of ancient Ferentinum will be found in *Röm. Mit.* XXIV, 1909, pp. 1-58, (4 pls.; 24 figs.). The author, T. ASHBY, of the British School in Rome, describes in great detail, and with abundant illustration, the remarkable masonry of the walls and acropolis of this ancient capital of the Hernici.

**Roman City Gates.**—Roman city gates form the subject of an elaborate and abundantly illustrated study by RUDOLF SCHULTZE in *Bonn. Jb.* CXVIII, 1909, pp. 280-352 (12 pls.; 16 figs.).

**Shrine of Oriental Deities by the Grove of Furrina.**—A full account of the excavations conducted between December, 1908, and June, 1909, in the now well-known sanctuary by the Grove of Furrina is given by A. PASQUI in *Not. Scav.* 1909, pp. 389-410 (plan; 14 figs.).

**Little Bronze Wheels of La Tène III.**—In *R. Arch.* XIV, 1909, p. 467, H. HUBERT republishes (after G. BASERGA, 'Tombe a Perledo,' *Rivista archeologica della provincia di Como*, 1908, pp. 13-21) a pair of little bronze wheels on their axle found, with other objects, in a Gallic tomb at Perledo. Baserga thinks the wheels may have supported a vase or other object. He assigns the tombs to the second century B.C., Hubert to a later period, La Tène III.

**Sicilian Tombs.**—Tombs and their contents, mainly at Licodia and Centuripa, representing the period of transition from Sicilian to Greek, are studied by P. ORSI in *Röm. Mit.* XXIV, 1909, pp. 59-99 (26 figs.).

**Roman Mile Stones.**—In *Rec. Past.* IX, 1910, pp. 8-15, C. F. ROSS publishes a popular account of Roman mile stones, discussing their shapes, inscriptions, date, etc.

**A Representation of the Catapult.**—A new representation of a catapult is published by W. BARTHEL in *Röm. Mit.* XXIV, 1909, pp. 100-108 (4 figs.). It is the impression of a gem, and pictures Eros tormenting the



unhappy Psyche, whom he has impaled upon the point of the arrow which he is about to fire from his catapult.

**Ancient Lanterns.** — Ancient lanterns are discussed by S. LOESCHKE in *Bonn. Jb.* CXVIII, 1909, pp. 370-430 (9 pls.; 20 figs.).

**Alexandrian Silverware.** — Alexandrian silverware of the imperial period is treated at length by FR. DREXEL in *Bonn. Jb.* CXVIII, 1909, pp. 176-235 (4 pls.; 6 figs.).

**The Development of Curia.** — The development of *curia* out of rustic custom, and the relation of the word to *cohors*, *curtis* (mediaev.), etc., are traced by G. TOMASSETTI in *B. Com. Rom.* XXXVII, 1909, pp. 19-30.

**The Via Salaria.** — N. PERSICHETTI continues his studies of the topography of the Via Salaria in *Röm. Mitt.* XXIV, 1909, pp. 121-169 (7 figs.); and pp. 208-255 (7 figs.); with special reference to the environs of Rome and of Rieti.

**The Portrait of the Emperor Maximinus.** — A marble head of the Emperor Maximinus (235-238 A.D.), which has recently been acquired by the Berlin museum (*A.J.A.* XIII, p. 367), was discussed from the anthropological point of view by F. v. LUSCHAN at the May (1909) meeting of the Berlin Archaeological Society. He finds in the shape of the head evidence of the disease acromegalia, a belief that is supported by the literary tradition of the enormous height (over seven feet) and strength of the man. This disease especially enlarges the lower jaw and lengthens the head without greatly increasing the brain cavity. In its less advanced forms it is easily confounded with another abnormal type of face, which is especially familiar in the Hapsburg family as far back at least as Charles the Fifth, but, unlike the latter disease, it is not hereditary. (*Arch. Anz.* 1909, cols. 558 f.)

**The Mattei Collection and the Museo Pio-Clementino.** — In *Mél. Arch. Hist.* XXX, 1910, pp. 57-68, L. HAUTECŒUR describes the circumstances of the sale of some of the antiques of Don Giuseppe Mattei to Pope Clement XIV, in 1770. This, in part at least, led to the establishment of the Museo Pio-Clementino, in the Vatican. Other antiques of the Mattei collection were sold to foreigners. A manuscript of Clement XIV containing a list of the objects bought by him is published (pp. 69-75).

**A Sixteenth Century Panorama of Rome.** — A panorama of Rome in 1550, drawn by Hendrik Van Cleef, is published for the first time by A. BARTOLI in *B. Com. Rom.* XXXVII, 1909, pp. 3-11 (pl.). The view is taken from the Appian Way, and shows imposing ruins of the Domus Aurea and of Trajan's Thermae in the foreground. The article is supplemented by J. ORBAAN, who gives a catalogue of drawings of Rome and its environs by Dutch masters, now in the Louvre and the British Museum.

**The Annexation of Gaul.** — In *R. Arch.* XV, 1910, pp. 93-103, G. FERRERO maintains that Gaul was annexed in 57-56 B.C. *Ibid.* pp. 104-106, C. JULLIAN replies in support of the date 51-50 B.C. The arguments on both sides are drawn from literary sources.

## SPAIN

**The Carved Stelae of León.** — In *R. Ét. Anc.* XII, 1910, pp. 189-192 (pl.), J.-A. BRUTAILS argues that the source of the ornamentation found upon the stelae of León, Burgos, and in the upper valley of the Garonne is to be sought on the eastern shores of the Mediterranean.



**Primitive Monuments of the Balearic Isles.**—In *R. Arch.* XIV, 1909, pp. 333–350 (2 plans; 3 figs.), L. CH. WATELIN describes and discusses the primitive monuments of Majorca and Minorca. He ascribes the isolated talayots (towers) to the first period, various fortifications, cities, and isolated posts to the second, enclosures fortified with masonry of small stones and also square talayots with round interior to the third, talayots of Minorca, taulas (tables), hypostyle constructions, and naus or navetas to the fourth. Some other structures are of indeterminate date. His periods correspond to the First Bronze Age (Copper Age), the Second and Third Bronze Ages, and the Iron Age.

## FRANCE

**The Palaeolithic Remains of Amiens.**—In *R. Ét. Anc.* XII, 1910, pp. 170–176 (pl.), V. COMMONT, dissatisfied with the classification of palaeolithic implements, presents briefly the results of his studies of the remains of the palaeolithic period at Amiens.

**Crete and the Rhone.**—In *Exp. Times*, XXI, 1910, pp. 303–305, J. R. HARRIS seeks to show from the proper names that the civilization of the Rhone valley was due in the first instance to colonies sent out from Crete.

**The Treasure of Tayac.**—In *R. Ét. Anc.* XII, 1910, pp. 21–46 (8 figs.), A. BLANCHET disputes the conclusions of R. Forrer that the treasure found at Tayac (Gironde) in 1893 was part of the spoils of the Cimbri and that from it something could be learned of their wanderings. He thinks that the coins are chiefly local and that they had nothing to do with the Cimbri.

**Two Gallic Tetradrachms.**—In *R. Ét. Anc.* XII, 1910, pp. 181–182 (4 figs.), H. DE LA TOUR calls attention to two tetradrachms in the Bibliothèque Nationale (Nos. 9910 and 9911) with a laureate head on the obverse and a horseman with triangular helmet on the reverse. They are probably the work of the Taurisci, and are the prototypes of a long series of imitations.

**The Discoveries at Vieux.**—In *M. Soc. Ant. Fr.* LXIX, 1909, pp. 225–335 (plan; 3 figs.), M. BESNIER discusses the topography of Vieux, the ancient Aregenua, and describes the discoveries made on the site from 1580 to 1899.

**A Catalogue of the Mosaics of Gaul.**—In *Inventaire des mosaïques de la Gaule. II. Lugdunaise, Belgique et Germaine* (Paris, 1909, Leroux. 233 pp. 8vo.), A. BLANCHET completes his catalogue of the mosaics of Gaul. The second volume comprises Nos. 702–1675. The first volume described the mosaics in Gaul proper.

## BELGIUM

**Coins of the Atrebrates.**—The Belgian tribe of Atrebrates coined gold in imitation of the types of similar coins of the Bellovaci, which were in turn imitated from the staters of Philip II, king of Macedonia (359–336 B.C.), that have a head of Apollo on the obverse and a *biga* on the reverse. The Vicomte B. DE JONGHE describes in *R. Belge Num.* 1910, pp. 245–251 (pl.), the successive degenerations of these types in the coins of the Atrebrates. The representations finally became fairly unrecognizable, except by tracing the steps of the process.

## SWITZERLAND

**Greek Vases at Bern.**—In *R. Arch.* XV, 1910, pp. 217-239 (14 figs.), W. DEONNA describes four red-figured vases in the museum at Bern: (1) A pelike on each side of which a standing maiden offers an alabastron to a seated person, on one side a youth, on the other a maiden. On each side is the inscription *καλός*. The date is early in the fifth century. (2) A Nolan amphora. On one side the bearded Dionysus, before whom, in full front, with head in profile, is a dancing satyr. Inscription *Οἰονοκλῆς* (or *Διονοκλῆς*) *καλός*. On the other side a satyr with a wine-skin; inscriptions *καλός* and *Ἀκεστορίδης*. The style is related to that of Brygos. A somewhat detailed discussion of the development of the front view in vase painting and relief sculpture is introduced. (3) Amphora; on one side a youth pursuing a young woman, on the other a youth and a bearded man; on the foot a *graffito* *ΞΕΙΝ*. The vase is not earlier than the middle of the fifth century, but the drawing retains noticeable archaisms. (4) Hydria. Apollo Citharoedus is represented holding out a phial toward a young woman who is preparing to fill it from an oenochoe. This vase may be identical with one formerly in Castellani's possession at Naples (*Bull. Napolitano*, VI, pl. 2; Reinach, *Répertoire des vases*, I, p. 474, 5-6; cf. Heydemann, *Annali*, 1870, p. 225). All these vases came from Naples.

**An Apotropaion from Baden.**—An archaic bronze apotropaion from the Swiss Baden (Aguae) is published by P. WOLTERS in *Bonn. Jb.* CXVIII, 1909, pp. 257-274 (2 pls.; 4 figs.).

## GERMANY

**The Origin of the Bossed Vases of the Stone Age.**—In *Z. Ethn.* XLI, 1909, pp. 946-948 (discussion, pp. 948-950), C. SCHUCHHARDT claims a north German origin (the Semnones), for the prehistoric vases with four bosses. These, according to him, found their way down the Danube as far as Hungary (1200-900 B.C.) and Troy (800 B.C.), and not in the reverse direction. He thinks these sprang from prototypes influenced by basket-weaving, not, as vases in south Germany, from those which imitated gourds. The cross-influences of these classes are described, and the Rössen-, Gr. Gartach-, Hinkelstein-, and Spiral-meander-types characterized. Further, the Lausitz-type of the Bronze Age is by him vindicated for Germany, doing away thus with the Karpodacians, whom Götze and Kossinna suppose to have been its vehicle from southeast to northwest.

**The Date of the Roman Settlement at Heddernheim.**—In *Röm.-Germ. Kb.* III, 1910, pp. 23-29, G. WOLFF argues for a post-Augustan date for the Roman settlement at Heddernheim.

**An Engraved Glass Cup from Trèves.**—In *Bonn. Jb.* CXVIII, 1909, pp. 353-369 (3 pls.; 5 figs.), E. KRÜGER publishes an engraved glass cup from Trèves, with scenes from a combat with wild beasts in the arena, showing the employment of chariots.

**The Brick Stamps of Vetera Castra.**—The brick stamps of Vetera Castra are treated by P. STEINER in *Bonn. Jb.* CXVIII, 1909, pp. 246-256 (fig.).

## AUSTRIA

**The Invasion of the Marcomanni.**—Finds of coins in Vienna and Siebenbürgen briefly described in *M. b. Num. Ges. Wien*. VIII, 1909, pp. 129 f., and by W. KUBITSCHKE in the Austrian *Jahrbuch für Altertumskunde*, 1909, point clearly to the fear caused by the invasion of the Marcomanni in the second century, and of the Carpi in the third.

## GREAT BRITAIN

**Early British Iron Currency.**—In *Proc. Soc. Ant.* XXII, 1909, pp. 337-343, R. SMITH discusses an iron nail found near the earth-work called Cranborne Castle, Dorset; and an iron "currency bar" from Meon Hill, Gloucestershire. The nail, which is 7 inches long and  $\frac{3}{4}$  inch square below the head, is like others found on other sites, and corresponds with the nails mentioned by Caesar (*B.G.* III, 13) as used by the Veneti in their ships. The iron "currency bar" is a good specimen of the money of the Britons in Caesar's time. It is  $28\frac{1}{2}$  inches long and  $\frac{1}{2}$  inch wide, and is probably one of a hoard of four hundred found in 1824. Its weight is 10½ ounces avoirdupois. The writer examines the other known specimens and shows that they are of three sizes, with weights in the proportion of 1, 2, and 4. The presumed standard is 4770 grains or 309.74 grammes, that is, about 11 ounces avoirdupois.

**Roman Pottery from Pudding-pan Shoal.**—In *Proc. Soc. Ant.* XXII, 1909, pp. 395-413 (2 figs.), R. SMITH reports upon an unsuccessful attempt to find the Roman wreck on Pudding-pan Shoal in the Thames Estuary (*A. J. A.* XIII, p. 232). He also discusses the red Samian ware, which apparently came from this wreck, and publishes revised lists of the artists' names and the places where the fragments now are. All the potters mentioned, of whom anything is known, came from the Lezoux district in France.

**Hoard of Denarii at Castle Bromwich.**—GEORGE C. BROOKE describes in detail a find of *denarii* which had been buried in a small earthen pot near Birmingham. The lot numbered 199 specimens, ranging in period from Vespasian to Commodus, but including also six legionary coins of Mark Antony,—another indication that these debased legionary coins were not driven out of circulation by the reduction in weight of the *denarius* made by Nero (*Num. Chron.*, 1910, pp. 13-40; fig.).

## AFRICA

**The Inscription of Ifr'a.**—In *R. Arch.* XIV, 1909, pp. 387-415 (8 figs.), BOULIFA publishes, describes, and discusses the Libyan inscription at Ifr'a (Ifri n Dellal; see *A. J. A.* XIV, 1910, p. 128). The neighboring regions are also described. At the rock of Ifri n Eddellal, on which the inscription is painted, there was probably a workshop of metal workers. Perhaps the inscription merely contains their names. A fragmentary stele, on which a man on horseback was once represented, was discovered by the writer at Thala-Gala.

**Engraved Gems in Tunis.**—In *M. Soc. Ant. Fr.* LXIX, 1909, pp. 194-224 (11 figs.), L. POINSSOT describes thirteen engraved gems found in Tunis, of which eleven are now in the Bardo museum.

**The Cult of Silvanus in Africa.**—In *Mél. Arch. Hist.* XXX, 1910, pp. 77-97 (pl.), L. CHATELAIN publishes the inscription from the plain of the Sers, in Tunisia (*C. R. Acad. Insc.* 1909, pp. 467-469; *A. J. A.* XIV, p. 128), a metrical invocation or hymn to Silvanus. The worship of Silvanus in Africa and his relations to Mars, Mercury, Jupiter, and other deities, as well as the metrical and linguistic peculiarities of the inscription, are discussed.

**The Topography of the Battle on the Muthul.**—In *Jh. Oest. Arch.* I. XII, 1910, pp. 327-340 (5 figs.; map), R. OEHLER discusses the topography of the battle on the Muthul described by Sallust, *Bell. Jur.* 48-54.

## EARLY CHRISTIAN, BYZANTINE, AND MEDIAEVAL ART

### GENERAL AND MISCELLANEOUS

**The Mosaics of Saint Sophia at Salonica.**—In *Mon. Piot*, XVI, 1909, pp. 39-60 (4 pls.; 13 figs.), C. DIEHL and M. LE TOURNEAU discuss the mosaics in the church of Saint Sophia at Salonica, which were cleaned and studied by Le Tourneau in 1907 (see *A. J. A.* XIII, p. 377). The signatures of the Emperor Constantine, the Empress Irene and Bishop Theophilus date the mosaics in the apse at the end of the eighth century. Beneath these is a cross and two liturgical inscriptions which formed the original decoration of the apse. They date from the fifth or sixth century. The Pantocrator in the centre of the cupola dates from the middle of the seventh century; while the Virgin and the Apostles in the zone below date between the end of the tenth century and the middle of the eleventh.

**The Church of St. Demetrius at Salonica.**—In *R. Arch.* XIV, 1909, pp. 380-386, O. TAFRALI concludes that the restorations of the church of St. Demetrius at Salonica (see *A. J. A.* XIII, 1909, p. 522) began about 634 and were speedily finished. The Leon under whom the restoration took place cannot be one of the emperors. Perhaps he was an eparch. The article is in part a reply to Uspenskij (in *Izvestija russkago archeolog. instituta v Kije*, XIX, 1, 1909, pp. 1-61).

**A History of Byzantine Art.**—Under the title *Manuel d' Art byzantin*, CHARLES DIEHL has produced a real history of Byzantine art. He discusses the origin of that art from Hellenistic and Oriental sources, its development in architecture, sculpture, painting (including, of course, mosaic), and the lesser arts, from the beginning through the first "Golden Age" in the sixth and the succeeding centuries, the second "Golden Age" in the ninth, tenth, and eleventh centuries, and the "Renaissance of Byzantine Art" in the fourteenth century to its virtual extinction in the sixteenth century. A great number of monuments of all kinds is cited, yet the fact is clearly recognized that Byzantine art is known to us "only by its débris." It may be that it produced few masterpieces, and it is certain that many points of its history are as yet obscure. "But one fact dominates all. In the whole Christian world, from the cupolas of Kief to the churches of Italy, Byzantium appears, throughout the entire period of the Middle Ages, as the great initiator; by the prodigious expansion of the art that she created, she has held an eminent position in the history of civilization, and for that reason, whatever its intrinsic merit, this art certainly deserves the attention and esteem of the historian." Very many points are discussed in greater or less detail. There

is an index, and bibliographical references abound. (CHARLES DIEHL, *Manuel d'Art byzantin*. Paris, 1910, Alphonse Picard et fils, xi, 837 pp.; 420 figs. 8vo. 15 fr.)

**The Miniatures in the Alexandrian Weltchronik.** — The thirteenth of J. WILPERT's *Beiträge zur christlichen Archäologie*, in *Röm. Quart.* 1910, pp. 1-29, amounts to a review of Bauer and Strzygowski's publication of the papyrus fragment of an Alexandrian chronicle (*Denkschriften der k. Akad. der Wissenschaften in Wien*, Bd. LI, 1905). The fragment dates ca. 400 A.D. Wilpert makes several corrections in the description of the miniatures of the manuscript, and finds that in the use of the nimbus, and in the representation of gestures, the artist works quite in the manner of his Roman contemporaries, and that the miniatures are therefore no evidence of the originality of Oriental art, as Strzygowski maintains. The figure of Theophilus in one of the miniatures furnishes a valuable example of an early *pallium sacrum*, or *ὑποφόριον*, which here appears as a kind of neckerchief with the ends hanging over the shoulders on the breast.

**Barbarian Helmets in Europe.** — In *M. Soc. Ant. Fr.* LXIX, 1909, pp. 173-193 (6 figs.), Baron J. DE BAYE publishes a helmet found last year in the Frankish cemetery at Trivières (Hainaut) and discusses the barbarian helmets found in various parts of Europe.

**A Door in the Madrasah of Barkūk.** — In *J.A.O.S.* XXX, 1909, pp. 58-60 (2 pls.), R. J. H. GOTTHEIL describes the bronze door lately acquired for the Hispanic Museum in New York City, bearing an inscription of the Sultan Barkūk in the year 788 of the Hegira, and suggests that this door is a forgery made by a modern Arab workman in Cairo.

## ITALY

**Late Sarcophagi in Rome.** — In *Röm. Quart.* 1910, pp. 90-96, F. DIBELIUS assembles a group of three sarcophagi, one in the Lateran with Christian subjects, another in the Conservatori decorated with a shepherd's hunt of non-Christian character, and a third in the Lateran bearing the well-known vintage relief interspersed with three bearded "good shepherds." The close relation of technique between the three convinces him that they come from the same atelier, which, therefore, furnished sarcophagi for pagans and Christians alike.

**Christian Sarcophagi and Pagan Reliefs.** — Christian sarcophagi in their historical relation to the pagan reliefs are discussed by L. v. SYBEL in *Röm. Mitt.* XXIV, 1909, pp. 193-207.

**Chronology of the Frescoes of S. Maria Antiqua.** — In *L'Arte*, XIII, 1910, pp. 1-20 and 81-107, J. WILPERT discusses the period to which the various frescoes of the church of S. Maria Antiqua belong. He places the foundation of the church in the fourth century, but finds no painted decoration earlier than the end of the fifth, to which epoch he assigns the *Madonna regnia* on the wall of the niche which was afterward transformed into an apse. He groups the rest of the decoration of the church proper around the pontiffs Martin I, John VII, and Paul I. Hadrian I (772-795) and subsequent popes confined their attention to the atrium, from which it appears that the church itself was destroyed by the earthquake in the first year of the pontificate of Leo IV. The atrium continued to serve as a

church dedicated to St. Anthony, and was destroyed in the fire incident to the sack of Rome by Guiscard in 1084.

**Ad Calice Benimus.**—The phrase *ad calice benimus* occurring in a *graffito* discovered by De Rossi in the cemetery of Priscilla in 1888, was interpreted by him as referring to eucharistic rites held in the cemetery, the phrase admitting, according to him, the supplement: *ad calicem sumendum ornumus*. DE WAAL in *Röm. Quart.* 1910, pp. 97-98, suggests by comparing an inscription of Concordia, in which *calcibus* is twice used qualified by *cereis*, that *calice* in the Priscilla *graffito* is to be restored *calices* (=candles), and the *ad calices ornumus* thus refers to the illumination of the catacombs for rites celebrated in honor of the dead, like the pagan *feralia*. So also the numerous *calices* mentioned as gifts to churches in the *Liber Pontificalis* are to be understood as lamps and not as eucharistic chalices.

**Mediaeval Fortifications at the Foot of the Palatine Hill.**—In *Rend. Acc. Lincei*, XVII, 1909, pp. 527-539 (3 figs.), A. BARTOLI writes of certain remains of mediaeval fortifications beneath the Barberini vineyard on the Palatine Hill. Two walls 90 m. long, with the space between filled with a composition of rubble and cement, and having a passage behind, formed a fortification either built by the Frangipani or made use of by them.

**The Gothic Architecture of the Cathedral at Genoa.**—The cathedral at Genoa was consecrated in 1118. A rebuilding was begun, in the French manner, in the middle of the thirteenth century. The French style is represented by the façade, but in the construction of the nave, in the fourteenth century, the style is less pure and the nave was finished in Lombard fashion. Choir and transept were transformed in the seventeenth century. (C. ENLART, *B. Soc. Ant. Fr.* 1909, pp. 291-293.)

**A Mediaeval Church at Turin.**—Recent excavations in Turin, between the Roman theatre and the left side of the cathedral, have brought to light the remains of an ancient church, probably S. Salvatore, destroyed in 1490 to make way for the present Duomo. The most notable find is a mosaic pavement of the twelfth century. The most important remains having been removed to the Museo Civico, the ruins were buried again. (P. TORSICA, *Boll. Arte*, IV, 1910, pp. 1-16.)

**The Date of a Mosaic in S. Marco, Venice.**—The mosaic representing the discovery of the body of St. Mark is divided into two sections, in one of which the Doge, clergy, and people kneel in prayer, and in the second are seen transfixed with astonishment when a pillar opens and discloses the body of the saint. In the first section, six men stand immediately behind the Doge, in the second there are only three. This dates the mosaic after the establishment of the Venetian constitution in 1173, when six councillors were appointed as a privy council to the Doge. The three dignitaries in the second portion represent the three procurators of S. Marco; a dignity established by the first Doge under the new régime, Sebastiano Zioni. (O. BÜHM, *Burl. Mag.* XVII, 1910, pp. 40-46.)

#### FRANCE

**The Sarcophagus of La Gayolle.**—In *R. Ét. Anc.* XII, 1910, pp. 16-20 (2 figs.), C. JULLIAN shows that the scenes carved on the sarcophagus from La Gayolle, now at Brignoles (Espérandieu, No. 40), are purely Christian



and not due to a mixture of Christian and pagan ideas. The visible remains at La Gayolle date from the third to the thirteenth century A.D.

**The Temple of Lanleff.** — In *R. Arch.* XV, 1910, pp. 212-216 (fig.), A. MARTIN pleads for the conservation of the "Temple" of Lanleff (canton of Plouha, Côtes-du-Nord), a circular Romanesque church, probably built by some returned crusader in rude imitation of the church of the Holy Sepulchre. A bibliography is appended.

**Robertus.** — In *R. Arch.* XV, 1910, p. 298, L. BRÉHIER reads R(o)tb(er)-tus (not Rittibitus, Rittbius, or Ritbius), as the name of the artist of one of the capitals of the choir of Notre Dame du Port.

**The Seals of Roger de Gaignères.** — In *M. Soc. Ant. Fr.* LXIX, 1909, pp. 42-158 (12 figs.), J. ROMAN discusses the seals chiefly of the eleventh, twelfth, and thirteenth centuries in the collection of Roger de Gaignères now in the Bibliothèque Nationale. He points out the characteristics of the artists who copied them and appends a catalogue.

**Crowned Armorial Bearings.** — Four crowned armorial bearings represented on French seals of the end of the thirteenth and beginning of the fourteenth centuries are published and discussed by MAX PRINET in *R. Arch.* XIV, 1909, pp. 370-379 (4 figs.). The seals are those of the city of Bordeaux (1297), of the bailiwick of the Mountains of Auvergne (1303), of the royal court of Montferrand (1315), and of the parliament of Brittany (1315). It has been believed that armorial seals surmounted by a crown were not used until the middle of the fourteenth century.

**The Lilies of France.** — In *B. Soc. Ant. Fr.* 1909, pp. 283-285, M. PRINET traces the history of the three lilies on the arms of "modern France," and shows that they occur as early as 1228.

**Two Gratings in the Musée de Douai.** — In *M. Soc. Ant. Fr.* LXIX, 1909, pp. 159-172 (3 figs.), C. ENLART discusses two gratings in the Musée de Douai, one of the fourteenth and the other of the fifteenth century.

**The Group of the Visitation on the Cathedral at Reims.** — On the head of the Virgin of the group of the Visitation at the right of the door of the cathedral of Reims is an inscription formerly read "1394 x OC." It is now seen to be "1739, 4 Oc(tober)." Some repairs were made between 1737 and 1740, which would have given an opportunity to carve the inscription. (E. NEALE, *R. Arch.* XV, 1910, pp. 142-144.)

#### GERMANY

**A French Altar Piece in Berlin.** — In *Mon. Piot*, XVI, 1909, pp. 85-94 (pl.; 4 figs.), R. KOECHLIN shows that the marble altar piece recently acquired by the Berlin museum is probably the work of some unknown follower of Jean de Saint-Romain or Jean de Liège and dates from the middle of the fourteenth century.

#### GREAT BRITAIN

**Mediaeval Knockers.** — In *Proc. Soc. Ant.* XXII, 1909, pp. 380-389 (8 figs.), M. CHRISTY publishes a latten door knocker from Lindsell, Essex, dating from the twelfth century, and discusses six other specimens which date from the twelfth to the end of the fourteenth century. The author believes that they were really sanctuary rings, not knockers. O. M. DALTON, *ibid.* pp. 389-391, discusses the origin of mediaeval knockers.



**A Penny of St. Aethelberht.** — In *Proc. Soc. Ant.* XXII, 1909, pp. 432-442 (pl. with 21 figs.), P. W. P. CARLYON-BRITTON publishes a penny of St. Aethelberht, king of East Anglia, found at Tivoli in 1908 and now in his possession. Only one other specimen (in the British Museum) is known. On the obverse is the head of the king to the right surrounded by the letters of his name, and three Runic characters for LUL, probably the name of the moneyer. On the reverse beneath the word REX, in a framework of dots, are the twins beneath the wolf. Aethelberht was killed by Offa, king of Mercia, in 793.

## RENAISSANCE ART

### GENERAL AND MISCELLANEOUS

**Renaissance Architecture in Sweden.** — In *Skrifter utgifna af Kungl. Humanistiska Vetenskaps-Samfundet i Uppsala*, XII, 1909, 1-192, ix pp. (82 figs.), A. HÄHR discusses under the title 'Arkitektfamiljen Pahr' the important contributions to architecture in Sweden made during the reign of John III (1568-1592). Previous to his time there was no important profane building in the country. The king was familiar with the work of the renaissance in Italy and in the north, and to carry out his great projects of building churches, castles, etc., he called into his service such well-known architects as Willem Boy and Arent de Roy from the Netherlands, and particularly members of the family of Pahr from Italy. The work of Giovanni Baptista (Hans), Kristoffer, Franciscus, and Domenicus Pahr is carefully examined.

**The Fountain of Life.** — A study of the meaning of the "Fountain of Life" in Christian art is published in *Burl. Mag.* XVII, 1910, pp. 99-109, by EVELYN UNDERHILL. The type appears first as a fountain symbolical of baptism, but was later transformed into a laver containing the blood of Christ. The transition from the old idea to the new may be found in the "Adoration of the Lamb" at Ghent and the "Fountain of Living Water" in the Prado at Madrid. In the first the baptismal water is associated with the "blood of the Lamb" and in the second the water bears upon its surface little Eucharistic wafers. The final stage of the evolution is seen in Hovenbault's "Fountain of Life" in the Béguinage at Ghent, in which the faithful hold out their hearts to receive the blood which flows from Christ in Paradise and is increased by the Virgin and Saints who pour out their own blood into the stream from chalices. The basic idea of such pictures was not Redemption, in the Passion, or the Eucharist, but the dispensation of grace.

**Attributions to Petrus Christus.** — E. A. DURAND-GREVILLE assigns to Petrus Christus the great triptych of the royal chapel in the cathedral at Grenada, representing The Crucifixion, The Descent from the Cross, and The Resurrection, which was hitherto ascribed to Thierry Bouts or to Onwater. He finds Petrus Christus' hand again in another triptych in the Corpus Christi College at Valencia, an Entombment in the National Gallery, the Madonna in the Prado (No. 2194), and the four Scenes from the Life of Mary in the same gallery (*B. Soc. Ant. Fr.* 1909, pp. 313-316).

### ITALY

**Pictures in the Accademia Proporziana at Assisi.** — M. H. BERNATH describes in *Z. Bild. K.* XXI, 1910, pp. 119-123, the pictures in the Acca-

demia Properziana at Assisi. The works of which reproductions are given are: a painted Crucifix from the church of S. Apollinare, which the writer ascribes to Allegretto Nuzi; a fresco from Mora, near Assisi, representing an episode in the life of St. Julian; two half-figures of angels by Matteo da Gualdo; the Madonna from Porta S. Giacomo, by Fiorenzo di Lorenzo, in which Bernath finds evidence of the collaboration of Pinturicchio; two figures of saints by Tiberio d'Assisi; a Crucifixion by Niccolò Alunno, from S. Crispino; and the "Madonna della Misericordia," on a gonfalone likewise from S. Crispino and by the same painter.

**Benozzo Gozzoli's Frescoes in Santa Rosa, Viterbo.**—Benozzo's frescoes in the church of Santa Rosa at Viterbo, representing the life of that saint, were destroyed in 1642, and are known only by the copies executed in pen and light tempera in that year by Francesco Sabatini. These copies are published in *L'Arte*, XIII, 1910, pp. 36-42, by R. PAPINI, with commentary illustrating the data they furnish in the artistic development of Benozzo.

**The Loggia of Sansovino.**—In an article in *L'Arte*, XIII, 1910, pp. 108-133, G. LORENZETTI traces the history of the Loggia of Sansovino at Venice from its primitive, inartistic, and temporary form through the construction of Sansovino's building, the addition of the esplanade in the seventeenth century, and the changes wrought by the restoration of the eighteenth century. The original idea of Sansovino is shown by an engraving of Giacomo Franco, the restoration of the seventeenth century by one of Luca Carlevaris. The writer comments on the sculptures of the loggia by Sansovino, and apportions the reliefs among his collaborators: Gerolamo Lombardo, Tiziano Minio, and Danese Cattaneo.

**An Unrecognized Palma Vecchio.**—DETLEV VON HADELN in *Mh. f. Kunstw.* III, 1910, pp. 110-111, publishes a Flagellation in the gallery at Rovigo, which has been assigned to Giorgione and by Crowe and Cavalcaselle to the school of Bonifazio. Von Hadeln claims it for Palma Vecchio on internal grounds.

**An Allegory by Luini.**—G. FRIZZONI in *Rass. d'Arte*, X, 1910, pp. 41-44, reconstructs a picture of Luini's, of which only a fragment remains in a private collection at Bergamo, representing a woman's head. The entire picture is seen in a copy of the sixteenth century in the collection of Sig. Talacchini at Milan, in which is seen a nude woman holding in her right hand a pair of wings, in her left a tortoise, and sitting on a pedestal which is inscribed with the motto which the picture is intended to illustrate: *medium tenere beati*. Frizzoni shows also that the Bergamo fragment cannot be ascribed to Giampietrino.

**A Picture by Francesco Melzi.**—There are but two pictures attributed to Leonardo's favorite pupil in public galleries: the Vertumnus and Pomona at Berlin and the Colombina in the Hermitage. C. J. FFOULKES is inclined to assign to him the Leonardesque half-figure of a woman, nude to the waist, in the collection of Sir Kenneth Mackenzie in London (Fig. 5). This is the last of a series of half a dozen replicas of the same subject, probably all copies of a *bottega* piece modelled on the Mona Lisa (*Rass. d'Arte*, X, 1910, pp. 27-29).

**The Art of Giovanni Cariani.**—In *L'Arte*, XIII, 1910, pp. 177-190, A. FORATTI discusses the works of Giovanni Cariani. He divides his career into three periods: the Palmesque, the Giorgionesque, and the eclectic.



FIGURE 5.—PICTURE BY FRANCESCO MELZI.

**The Portrait of Doge Marcello.**—The portrait of Doge Marcello in the Pinacoteca Vaticana was assigned to Titian by Crowe and Cavalcaselle, the Cicerone, and Morelli, but given to Cariani by Berenson. DETLEV VON HADELN has discovered evidence in Lotto's *Libro dei Conti* that the portrait was ordered of Lotto by a member of the Marcello family in 1542, and later in the same year the commission was refused. Von Hadeln considers this

a piece of evidence in favor of Titian's authorship, for if the family had decided upon so prominent a painter as Lotto, it is more likely that they would have turned to Titian upon his refusal, than to a second-rate painter like Cariani (*Rep. f. K. XXXIII*, 1910, pp. 101-106).

**Attributions to the "Maestro della Pala Sforzesca."** — E. JACOBSEN in *Rass. d'Arte*, X, 1910, pp. 53-55, attributes to this unknown painter a Holy Family in the *Seminario* at Venice, variously attributed by others to Leonardo, Marco d' Oggiono, and Boltraffio, and a drawing of a female head in the Galleria Borghese at Rome. He finds traces of the master's style in several other works, notably in the Madonna of the Morrison Collection in Boston, given to Francesco Napoletano by Perkins and Cagnola.

**Michele and Pier Ilario Mazzola.** — L. TESTI reconstructs the careers and *oeuvre* of Michele and Pier Ilario Mazzola in *Boll. Arte*, IV, 1910, pp. 49-67 and 81-97, his article amounting to an analysis of painting at Parma, and particularly the decoration of the cathedral, during the fifteenth century. He finds that from the decoration of the Baptistry on, foreign painters abounded in Parma, especially beginning with the fifteenth century. The chronological sequence of the cathedral chapels is established as well as the authorship of their frescoes. To the article is appended a chronological résumé of the careers of the various members of the Mazzola family, and a genealogy.

**The "Borro" in Berlin.** — H. VOSS in *Mh. f. Kunstw.* III, 1910, pp. 18-24, assigns the so-called "Portrait of Alessandro del Borro" in the Kaiser Friedrich Museum to Andrea Sacchi, principally by reason of its resemblance in technique and conception to Sacchi's portrait of Oreste Giustini-ani in the Galleria Borghese at Rome.

**A Roman School.** — O. OKKONEN in *L'Arte*, XIII, 1910, pp. 51-53, argues that the number of pictures attributed to Antoniazio Romano is much too large, and that certain of them belong to other artists of a number and importance to contribute a real "Roman School" of the fifteenth century. He gives a list of pictures to be ascribed to such a school, and urges the attribution to Antoniazio of the two pictures representing Peter and Paul in the Oratorio del Gonfalone at Rome.

**Syracusan Painting of the Quattrocento.** — In *Rass. d'Arte*, X, 1910, pp. 23-27, E. MAUCERI publishes a number of Syracusan paintings of the fifteenth century, isolating a number of schools and showing the influence of Antonello da Messina toward the end of the century.

**The Authorship of the "Giuochi di Putti."** — In a study of the history of the conception and execution of these tapestries which Leo X ordered of Pieter van Aelst, through the medium of Vincidor di Bologna, E. DIEZ arrives at the conclusion that Vosaei is right in assigning the cartoons to Giovanni da Udine. The sole remaining cartoon is now in the possession of Herr Julius Deutsch of Vienna and is of the full size of the tapestry which was to be copied from it. The technique betrays a Flemish hand, and the cartoon was probably done in Flanders after a drawing by Giovanni da Udine, whose style is clearly traceable through the copy. (*Jb. Preuss. Kunsts.* XXXI, 1910, pp. 30-39.)

**Bernini's Fountains.** — In a discussion of the fountains designed by Bernini, in *Jb. Preuss. Kunsts.* XXXI, 1910, pp. 99-129, H. VOSS arrives at a higher appreciation of the artist's taste than that usually held. He com-

pares Bernini's fountains with those of the early Renaissance, and finds that the former are merely special applications of architecture, and a field wherein the artist indulged his imitation of the antique. The Roman Baroque was the first to seize the artistic possibilities of water, and Bernini was the greatest master in the combining of water and fountain into a consistent whole.

**Alabaster Polyptychs.** — Alabaster polyptychs exist in Genoa, at the Galleria di Palazzo Bianco, in the parish church at S. Benedetto a Settimo (Pisa), in the Museo Civico at Ferrara, and in the Museo Nazionale at Naples. They all present the characteristics of their class, rude execution, polychromy, etc. The polyptych of S. Benedetto is of somewhat later date than the others, and the one at Naples is the best preserved, showing the original arrangement and manner of framing of these reliefs. Resemblance to English examples makes it possible that the Italian examples are of English origin, alabaster carving having been largely practised in England in the fifteenth and sixteenth centuries. (R. PAPINI, *L'Arte*, XIII, 1910, pp. 202-213.)

**The Book of Offices Bound by Benvenuto Cellini.** — In *Mél. Arch. Hist.* XXIX, 1909, pp. 329-339, P. FEDELE reviews the previously known descriptions of the Book of Offices (ufficiolo di Madonna), with a binding by Benvenuto Cellini, which was presented to Charles V in 1536 by Pope Paul III, and adds further information derived from the papal expense accounts of 1536. From these it appears that the illuminations of the book were by Vincenzo Raimondi. Of the known bindings attributed to Benvenuto none agrees with his description so well as the one in the ducal museum at Gotha. This still contains a book ornamented with miniatures. Should these prove to be by Raimondi, the identity of the binding with that described by Benvenuto would be established.

#### SPAIN

**Painting in Aragon and Navarre.** — A. L. MAYER contributes to *Mh. f. Kunstw.* III, 1910, pp. 190-200, a brief survey of the principal existing productions of this school from the thirteenth to the eighteenth century. Reproductions are given of four Aragonese pictures: a Madonna in the Städtisches Institut at Frankfurt-a-M. (ca. 1420); the Madonna in the collection of D. Mariano de Pano at Saragossa (ca. 1450); a St. John Baptist in the collection of L. Galdeano at Madrid (ca. 1460); and a St. Michael in the same collection (ca. 1460).

**Alfonso Cano and his School.** — A. L. MAYER contributes to *Jb. Preuss. Kunsts.* XXXI, 1910, pp. 1-29, a life of Alfonso Cano of Grenada, with an appreciation of his principal works both in sculpture and painting, and an account of his influence on the subsequent artists of his city.

#### FRANCE

**A Pietà of Nicolas Froment.** — In *Mon. Piot*, XVI, 1909, pp. 147-208 (3 pls.; 31 figs.), C. DE MANDACH publishes a Pietà at Villeneuve-les-Avignon, which he attributes to Nicolas Froment. He also discusses the characteristics of this painter and his connection with the Flemish and Italian Schools.

**The "Raphael" of Narbonne.**—In *R. Arch.* XV, 1910, p. 299, S. R. gives briefly the history of the much-damaged fresco of the Martyrdom of St. Cecilia, which was originally in the chapel of the Villa Magliana of Leo X and is now in the museum at Narbonne. The design is by Raphael; the execution may be attributed to Spagna.

**The Date of the Death of Jehan Perréal.**—In *B. Soc. Ant. Fr.* 1909, pp. 370-374, M. ROY publishes two documents which show that the artist, Jehan Perréal, died at Paris in June or July, 1530.

**Two Fifteenth-Century Portrait Busts.**—In *Le Musée*, VI, 1909, pp. 216-225 (2 pls.), A. SAMBON publishes two busts in the collection of J. Seligman, one of a young woman, supposed to be a portrait of Beatrice of Aragon, attributed to Francesco de Laurana; and the other the portrait of a man, which he attributes to Pietro da Milano. The writer gives a brief sketch of these two fifteenth-century artists. Both busts are interesting pieces of sculpture.

**The Boy Removing a Thorn from his Foot.**—In *Mon. Piot*, XVI, 1909, pp. 95-97 (pl.), G. MIGEON compares the Renaissance bronze statuette of a boy removing a thorn from his foot, recently acquired by the Louvre from the collection of Lord Lonsdale, with similar statuettes in the possession of Charles Haviland and Gustave Dreyfus.

**A New View of the Name "Monvaerni."**—Didier Petit's discovery of this "artist's signature" on Limoges enamels has always been regarded with some doubt. In *Burl. Mag.* XVII, 1910, pp. 36-39, H. P. MITCHELL brings evidence to show that it is really a donor's name, and is to be interpreted in its full form: *Monca ep* (not *er*) *Ni*, i.e. *Montbas, episcopus Nazarethi*. Jean Barton de Montbas was bishop of Limoges from 1458 to 1484, in which year he resigned the see and was made archbishop of Nazareth. He is represented as donor on a large Limoges triptych described by Ardant and Labarte. *Ibid.* pp. 123-124, E. BECK presents objections to this view which are answered by the previous writer.

**An Illuminated Manuscript of Virgil.**—In *B. Soc. Ant. Fr.* 1909, pp. 334-336 (2 figs.), F. DE MÉLY calls attention to a manuscript of Virgil in the library of Dijon (No. 493), containing miniatures which he regards as among the best examples of French art of the fifteenth century. Two names are found on the miniatures, *Peryez* and *W. bourbon*, which have not yet been explained.

**Ugo de Vosor or Nabuchodonosor.**—In *R. Arch.* XV, 1910, pp. 240-243 (2 figs.), F. DE MÉLY maintains his reading, "Ugo de Vosor," in the manuscript of the "Heures d'Anne de Bretagne." He shows that Nabuchodonosor has nothing to do with the scene in the illustration, that Vosor (Vaulsor, Vador) was a monastery, near which was a convent called Machabeorum, and that the I AB of the inscription stands for J(ean) Ab(ry), abbot of Vaulsor from 1461 to 1489. He also recapitulates briefly his proof (*Gaz. B.-A.* September, 1909) of the existence of artists named Wante.

#### HOLLAND

**An Apostle-Series by Jakob Cornelisz.**—CAMPBELL DODGSON, in *Jb. Preuss. Kunsts.* XXXI, 1910, pp. 40-46, establishes the authorship of Jakob Cornelisz for three wood-cuts, one in the Berlin Kupferstichkabinett, representing St. Philip, another in the British Museum, representing St. James



Major, and a third, St. Bartholomew, in the Bodleian at Oxford. The appearance of others of the series may be judged by six copies from the series in the Rijksprentenkabinet at Amsterdam.

**The Master of the "Virgo inter Virgines."**—In *Jb. Preuss. Kunsts.* XXXI, 1910, pp. 64-72, M. J. FRIEDLÄNDER assembles the *oeuvre* of the master of the "Virgo inter Virgines," and describes his characteristics. The relation with Geertgen he finds to be not so striking as to suggest that the latter was the teacher of the *aumenio*: in fact, he seems to be later in date. His style is traceable in the illustrations of the *Ludolphus, Leben Christi* and in prints of the *Hystorie van die seven wise Mannen*. He evidently flourished toward the end of the fifteenth century, and lived probably at Delft or Gouda.

### GERMANY

**Fifteenth-Century Signatures.**—G. DEHIO in *Rep. f. K.* XXXIII, 1910, pp. 55-64, assembles a series of interesting examples to show how little dependence can be placed on German artists' signatures of the fifteenth century. The signature regularly denotes the impresario, and if the name is that of a sculptor or painter, he inscribes it as that one of the artists engaged in the work with whom the contract was made. This accounts for painters' names appearing on sculpture and vice versa. This rule does not survive the fifteenth century as a general practice.

**The Chronology of the Hausbuchmeister.**—C. GLASER in *Mh. f. Kunstw.* III, 1910, pp. 145-156, works out a chronological arrangement of the prints of the *Hausbuchmeister*. His artistic activity began ca. 1465-70, and divides itself into early, middle, and later periods, these in turn admitting of subdivision. The early period comprises the years 1465-75, the middle period 1475-88, the late period 1488-1505. A chronological table of the prints is appended to the article.

**Hans Dürer in Poland.**—I. BETH in *Jb. Preuss. Kunsts.* XXXI, 1910, pp. 79-98, traces the artistic development of this lesser brother of the great Albrecht, showing that his earlier tendency was to be a sort of bridge between his brother and Altdorfer. His "Polish" style is represented by the paintings on the Silow altar in the cathedral at Krakau wherein he betrays the effect of Italian influence.

**Simone Martini and the Bamberger Altar.**—The Carrying of the Cross on the Bamberger altar in the National Museum at Munich is obviously copied from Simone Martini's painting of the same subject in the Louvre, and a similar relation exists between the Descent from the Cross on the same altar and Simone's Descent from the Cross in Antwerp. Simone was the first to render these two subjects in the dramatic manner and with the peculiar fashion illustrated by these works, which had a wide influence after his time. (H. SEMPER, *Mh. f. Kunstw.* III, 1910, pp. 71-76.)

**Drawings in the Frankfurt Museum.**—G. FRIZZONI discusses the drawings in the Städelsches Institut at Frankfurt in *L'Arte*, XIII, 1910, pp. 21-34. The most interesting of the drawings treated is one by Annibale Caracci, representing the cortile of the Palazzo Farnese, in the centre of which stands the Farnese Hercules, which was removed to Naples about 1700.

**Exspectatio Mariae.**—The curious scene on Grünewald's Isenheimer altar in Colmar, which represents the Virgin and a choir of angels kneeling

in adoration of the Nativity represented in the wing to the right is the subject of an article by K. LANGE in *Rep. f. K.* XXXIII, 1910, pp. 120-135. He rejects the previous attempts to explain the picture, and interprets it as an *Expectatio Mariae*, Mary's Waiting for the Birth of Christ, which forms a conspicuous part of the life of the Virgin in the apocryphal gospels and in late mediaeval poetry, notably the Life of Mary by Philip the Carthusian, and became the occasion of a special festival in the Spanish church, on the 18th of December.

**Hans Peisser.**—G. HABICH in *Mh. f. Kunstw.* III, 1910, pp. 66-70, gives a brief résumé of the artistic activity of the Nürnberger sculptor Hans Peisser and reproductions of five of his medallions.

**The "Flora" Bust.**—*Ber. Kunsts.*, 1909, pp. 73-82, contains the report of A. MIETHE, who was commissioned to examine the relation of the wax bust of Flora in the Kaiser-Friedrich Museum, claimed as a Leonardo by the Direction, to the photograph of the similar bust which appears in the album of the English artist Lucas, whose son maintains that the bust was made by his father, and cites the photograph in support of his claim. Miethé finds that the Lucas photograph was made from the Berlin bust, and that the drapery appearing in the former was added partly by actual modelling, partly by painting the negative or positive of his photograph. This is shown by the fact that the cracks in the wax show through this drapery in places. The same evidence is cited to show that the bust could not have been manufactured in Lucas' day, as the cracks would not have already appeared. Moreover, the filling which was found in the interior of the bust was evidently put in by Lucas to prevent further cracking. The inscription on Lucas' photograph, "The Flora of Leonardo da Vinci," shows that he considered it an antique. The chemical examination of Dr. RATHGEN (*ibid.* pp. 83-84) produced no important evidence. Investigations in England show that Lucas' work shows no trace of interest in the Italian Renaissance, and no evidence of the ability to conceive and carry through such a subject as the Flora. The wax figures of Lucas which still exist are clearly modern, and have none of the marks of antiquity which characterize the Flora. (POSSE, *ibid.* pp. 85-88.) The other side of the controversy is represented by a series of affidavits published in *Berl. Mag.* XVII, 1910, pp. 178-183, tending to show that the bust was made by Lucas. *Rass. d'Arte*, Jan. 1910, pp. v-vi contains a communication by E. DIEZ in favor of the authenticity of the bust. Another defence of the Flora is to be found in an article entitled 'Leonardo da Vinci und die Antike' by FRIDA SCHOTTMÜLLER in *Z. Bild. K.* XXI, 1910, pp. 111-118, in which the classic quality of the bust is urged in its favor because of Leonardo's manifest preoccupation with the antique. *Ibid.* pp. 148-155, appears an article by DETLEV VON HADELN which reviews the controversy and decides against the authenticity of the Flora. *Ibid.* pp. 156-162, A. JOLLES argues that the style of Lucas as shown in his other works is of so modern a character, and so different from that of the bust, as to make his authorship impossible. In *R. Arch.* XIV, 1909, pp. 416-430 (5 figs.), S. REINACH gives a résumé of the controversy.

**The Konhofer Window in Nürnberg.**—This window in the church of Sankt-Lorenz is usually dated 1452, that date appearing in its inscription. In *Rep. f. K.* XXXIII, 1910, pp. 155-159, J. SCHINNERER shows that this inscription is probably copied from the Latin epitaph on Konhofer's tomb,

and that the window could not have been done in 1452, as the church had not progressed far enough for glazing. The style is of the last decades of the fifteenth century.

#### AUSTRIA

**A Judgment of Paris by Lukas Cranach.**—In *Rep. f. K.* XXXIII, 1910, pp. 65-87, R. AMESDER discusses a Judgment of Paris in the *Landes-galerie* at Graz, which he assigns to Lukas Cranach and dates 1516-1519. It is the prototype of the many similar "school" productions of the same subject. The article amounts to a thorough review of Cranach's characteristics.

#### GREAT BRITAIN

**A Tudor Painter.**—*Burl. Mag.* XVII, 1910, pp. 71-79 and 147-149, contains an article by MARY F. S. HERVEY on Gerlach Flicke. His will recently discovered shows that he was a native of Osnabrück or its neighborhood, but he had removed to England before 1547. In 1554 he was in prison with his friend Strangways, the notorious "Red Rover" of the Channel, for participation in Wyatt's Rebellion, as we learn from the inscription on a portrait of the painter and Strangways which was sold at Christie's in 1881 and has since disappeared. Of the ten pictures by him of which we have any knowledge, only four can be traced: the Man with Columbine Flowers, at Newbattle Abbey, Dalkeith, which the writer suggests is a portrait of Lord Gray of Wilton; the portrait of Sir Peter Carew in the same place; the portrait of Cranmer in the National Portrait Gallery; and a portrait of Jacques de Savoie, Duc de Nemours, which is probably the latest known work of the master and was done ca. 1555.

**The Sculptured Parapets of Burnham Westgate Church.**—In *Proc. Soc. Ant.* XXII, 1909, pp. 498-500 (4 pls.), W. H. ST. JOHN HOPE describes the sculptured parapets of the church at Burnham Westgate, Norfolk. There are four pairs of figures on each side with intermediate shields, but as they are more or less mutilated all the subjects cannot be made out. The sculptures date from the time of Henry VII.

**Alabaster Figures from Fordham All Saints Church.**—In *Proc. Soc. Ant.* XXII, 1909, pp. 502-503 (pl.), NINA LAYARD publishes two alabaster figures of seated bishops from the church of Fordham All Saints, Suffolk.

### AMERICAN ARCHAEOLOGY

#### GENERAL AND MISCELLANEOUS

**Animal Pictures in the Mexican and Maya Manuscripts.**—In *Z. Ethn.* XLI, 1909, pp. 209-257, 381-457, 784-846; XLII, 1910, pp. 31-97 (pl.; 894 figs.), E. SELER discusses the animal pictures of the Mexican and Maya manuscripts. The mythological significance of the various animals is emphasized, and their use as signs for the days of the month, the cardinal points of the compass, their identification with the gods of the maize, the darkness, rain, etc., dwelt upon. Much light is cast on the Maya manuscripts, by comparison with the Mexican pictures and hieroglyphs, and Seler often disagrees with W. Stempell's identifications in his article on the animal pictures in the Maya manuscripts from the point of view of a zoöl-

ogist in *Z. Ethn.* XL, 1908, pp. 704-743 (*A.J.A.* XIII, p. 248). In *Papers of the Peabody Museum of American Archaeology and Ethnology*, Harvard University, IV, pp. 273-372 (39 pls.; 24 figs.), A. M. TOZZER and G. M. ALLEN treat the same subject. A general discussion of the mythological and symbolical bearings is followed by classified descriptions of the representatives. Reptiles, birds, and mammals occupy a large proportion of the consideration.

**The Island of Sacrificios, Mexico.**—In *Am. Anthr.* N.S. XII, 1910, pp. 237-295 (11 pls.; fig.), ZELIA NUTTALL gives an account of the discovery and history of the island of Sacrificios, near Vera Cruz, Mexico, describing its walls, paintings, and pottery as well as antiquities from the island in the National Museum, Mexico, and in the British Museum.

**Human Sacrifice in Central America.**—In *C. R. Acad. Insc.* 1910, pp. 109-126 (15 figs.), Dr. CAPITAN discusses human sacrifice in ancient Mexico and Central America, and uses by way of illustration reproductions from the codices.

**Ancient Peruvian Weaving.**—In *Z. Ethn.* XLII, 1910, pp. 154-164 (10 figs.), MAX SCHMIDT, after discussing differences in the loom and manner of weaving between the geometric and pictorial styles of Pachacamac pre-Inka weaving, concludes that the latter, with its scenes from life, and ornamentation borrowed from plants, was of foreign origin, having been perhaps brought in from Eastern Asia.

**The American Race.**—In *Am. Anthr.* N.S. XII, 1910, pp. 149-182 (15 figs.), W. H. HOLMES discusses 'Some Problems of the American Race,' arguing that it developed slowly from the earliest occupation of the continent until Columbian times. The dispersal of mankind did not take place until some advance had been made in the arts of humanity, and America was the last of the great land areas to be reached.

**The Cliff-Dwellings of Walnut Canyon.**—In *Am. Anthr.* N.S. 1910, pp. 237-249 (4 figs.), H. W. and F. H. SHIMER discuss 'The Lithological Section of Walnut Canyon, Arizona, with Relation to the Cliff-dwellings of this and Other Regions of Northwestern Arizona.' Besides descriptions of the dwellings themselves and their contents it is of a certain archaeological interest to note the authors' remarks on erosive climatic influence on the cliffs which contain the dwellings and the resistance of the various zones. The writers point out that these ancient tenement dwellers apparently found the narrow streets before their houses as great a convenience into which to throw waste as did the ancient Romans described by Juvenal; in either case the danger from falling pottery was probably at times very real.

15-

